

THE TRANSFORMATION AND REPRODUCTION OF GENDER STRUCTURE:
HOW PARTICIPATORY CONSERVATION IMPACTS SOCIAL
ORGANIZATION IN THE MAMIRAUÁ SUSTAINABLE DEVELOPMENT
RESERVE, AMAZONAS, BRAZIL

A Dissertation
Presented to the Faculty of the Graduate School
of Cornell University
in Partial Fulfillment of the Requirements for the Degree of
Doctor of Philosophy

by
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May 2012

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Catherine A. Meola, Ph.D.

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This dissertation explores the impacts of participatory conservation on gender structure in the Mamirauá Sustainable Development Reserve (MSDR), Amazonas, Brazil. Generally, I am concerned with the social consequences of conservation initiatives for protected area residents—to what extent the participatory model is equitable for local people, particularly sub-groups such as women, and how gender hierarchies are affected by program participation. Using ethnographic and other qualitative methods, I investigate the transformation and reproduction of gender relations by analyzing how conservation initiatives shift the gender division of labor, empower women, and impact family and community organization.

This study shows that participatory conservation projects, which introduce or reinforce exogenous institutions and cultural ideologies such as a cash economy, wage labor, democratic representation, organized civic engagement, and egalitarian ideology, create fundamental, unintended shifts in local social organization. These changes have important implications for human well-being and equality as well as long-term social and environmental sustainability. My findings show that gender relations are shifted in a more egalitarian direction as women engage in new economic activities, create political space, and interact with outside social carriers, yet, in many

ways, traditional gender relations, including norms and hierarchies, are reproduced. Programs remain focused on a traditional gender division of labor, reinforce cultural expectations regarding women's responsibility as the main providers of child care for dependent children, and do not address barriers to women's participation and leadership at the social-relational level, i.e., within marriages and families—both primary production sites of gender inequality.

The changes in social organization produced through sustainable development and conservation projects cannot be ignored from a conservation perspective, as these shifts affect the ability of women, potentially a strong source of conservation support, to participate as conservationists and active natural resource managers.

Last, the introduction and reinforcement of these modern institutions creates such fundamental shifts in social organization that the prospects for long-term sustainability of the Sustainable Development Reserve (SDR) model are questionable. Examples of concerning changes include shifts in household structure and the attenuation of family cohesion as men and women leave their communities for days and weeks at a time for paid labor in conservation-related jobs; decreased agricultural production; a decline in communal traditions of labor reciprocity resulting from the loss of available adult workers within the household and community; loss of intergenerational knowledge regarding natural resource use and traditional economic activities; as well as shifts in livelihood and material aspirations among younger generations.

BIOGRAPHICAL SKETCH

Catherine Alice Meola was born in Hudson, New York, in 1968 and raised in the Adirondack State Park of New York. Her parents are Sharon B. Lamb and Rudolph T. Meola. In 1989, she received a B.S. in Outdoor Education/Naturalist Studies from Northland College in Ashland, Wisconsin. She later received a M.S. in Environmental Studies and a secondary teaching certificate in Biology from Antioch New England Graduate School in Keene, New Hampshire. She has worked as an environmental educator, raft guide, wilderness expedition leader, ski patrol, seasonal forest ranger, public school teacher, and environmental writer. She has assisted teaching university-level courses at Northland College (Ashland, Wisconsin), North Country Community College (Saranac Lake, New York), Antioch College (Yellow Springs, Ohio), and Cornell University (Ithaca, New York). While a graduate student at Cornell University in the Development Sociology Department, she assisted with teaching six terms of undergraduate courses including Introduction to Sociology, Environment and Society, and Gender and Sexual Minorities. She also developed and held full responsibility for teaching two semesters of freshman writing seminars entitled *International Conservation: The Role of People and the Protection of Biodiversity*. Upon completing this dissertation, she will hold a MS/PhD in Development Sociology from Cornell University with a concentration in Rural and Environmental Sociology and minors in Feminist, Gender, and Sexuality Studies, International Development Planning, Natural Resources, and Latin American Studies.

She is married to Joseph J. Silvestri and has two children, Giovanni and Chiara.

To my parents:

Rudolph T. Meola, who inspired my pursuit of higher education, and

Sharon B. Lamb, who was with me every step of this journey.

ACKNOWLEDGMENTS

This dissertation would not have been possible without the support and generous contributions of many people. I would like to thank, most of all, my committee chair, Max J. Pfeffer, for his unflagging support and enthusiasm for this project, for his optimism and pragmatism, and for the many years of sound advice—which I should have heeded more often. Max, I thank you for the innumerable hours you’ve given me, for your good humor and affability, and for your patience, but above all, I thank you for believing in this work even when I did not.

I thank Parfait Eloundou-Enyegue for his skillful methodological guidance through both my master’s and doctoral studies, for always seeing the strengths in my work while kindly offering feedback to make it better, for the numerous talks over the years, and for his positive, warm and cheerful spirit. I am thankful for the good fortune of knowing you, Parfait.

I thank Jim Lassoie for welcoming me into his group of students and in doing so giving me a place to interact with others with similar interests and concerns. Graduate school can be an isolating and interminable experience. The time I spent in the Lassoie “Silkway” Group was a much needed antidote to the challenges of independent scholarship. I also thank you for so freely sharing your expertise, including access to your extensive course syllabus and other resources, while we were both teaching on the topic of international conservation. I thank you for your humor and warmth, for telling me that there are people who need to hear this story and that this dissertation made your head hurt. Thanks for sharing your stories from the field and for always keeping it real.

I thank Kathryn March for providing invaluable expertise on feminist theory and gender studies. Each time we met she opened my eyes to new perspectives and ideas. Kath, I thank you for offering some of the most interesting feedback on this

work. You not only showed me how this dissertation could be improved but you also provided me with fodder for future endeavors. I am grateful for your support and many kind words throughout this project, for sharing stories of your own challenges in the field, and for telling me that I am smart.

Also at Cornell University, I owe many thanks to Lindy Williams and Chuck Geisler for their many years of guidance and support as Directors of Graduate Studies and informal advisors. You've both been exceedingly generous with your time and advice over the years. Thank you.

I thank Barbara Risman, whose work has strongly influenced my thinking and who kindly provided feedback on parts of this study. Thank you, Barbara, for writing Gender Vertigo, a book that found me right when I needed it most. Thank you for your accessibility, your mentoring, and for all you do to move us toward gender equality.

Without the friendship of many fellow graduate students throughout the years, this process would have been unbearable. I especially thank Carylanna Taylor, Whitney Mauer, Marygold Walsh-Dilley, Melanie Stansbury, Mathew Hoffman, Joy and Florio Arguillas, Sergio Chavez, Joyce Altobelli, John Sydenstricker, Alan Barton, Devparna Roy, Bob Torres, Upik Djalins, Andrea Roufs Woodward, and Naoko Mizuno for your friendship, assistance, and inspiration.

I would also like to thank Tracey Aagard for years of invaluable assistance navigating the paperwork and bureaucratic hurdles of graduate student life. I thank Tracey for making these processes much more enjoyable and for just about always having the answer. You have been sorely missed in recent years.

In Brazil, I thank Fast Forward Language Institute for providing me such a warm welcome to Brazil and the language skills necessary to complete this undertaking. I thank Esmerelda da Silva and her daughter, Fabiana, for opening up their home to me as if I were family. I thank Pedro Lucena in particular for his

friendship, instruction as a language teacher and his hard work, courage, patience, and good cheer as a field assistant. Pedro's skill at making people comfortable was invaluable in opening up doors in Amazonas.

This study would not have been possible without support provided by the Mamirauá Institute. I owe thanks to more people in Mamirauá than I am able to name. To all of the people who participated in this study, I am deeply indebted for your willingness to open up your lives to my many questions. I am particularly thankful to the residents of my host community who were so welcoming and to the women of Mamirauá, many of whom gave me their trust and a great deal of their time. I thank Ruth Martins for the many ways in which she assisted me with field work. Her help was invaluable. I also thank numerous staff members of the Mamirauá Institute who shared their time and expertise. I especially thank Teresa Furtado for her assistance and most of all her friendship when it was most needed. I also thank Tony Martin for his insights, humor, encouragement, friendship, and candid interviews.

Various people helped with technical aspects of this project along the way. I thank Daniela Saldanha for her excellent transcription assistance and tutoring in Portuguese. I also thank Erin Eldermire for her assistance in tracking down elusive, bibliographic references as well as Camille Andrews for expert assistance with library research. I owe a special thanks to Florio Arguillas for his instruction, skillful assistance with data management, and for coming to my rescue more than once. I also thank Kristen Ebert-Wagner for her attention to detail and extremely speedy, high-quality formatting and editing assistance.

This project would not have been possible without the financial support of various organizations. I am indebted to the Fulbright Association, which sponsored my field work in Brazil. I am also grateful for funding from the Tinker Foundation, the Rural Sociological Society, and at Cornell University, the Mario Einaudi Center for

International Studies, the Polson Institute for Global Development, the Latin American Studies Program, and the Development Sociology Department. I was particularly fortunate to have been awarded a Foreign Language and Area Studies Fellowship through the Cornell Latin American Studies Program and the Tinker Foundation which provided me the opportunity to learn Portuguese—a vital skill without which qualitative research in Brazil would not have been possible.

My family and friends have been an invaluable source of support during this project. I thank my husband, Joe Silvestri, for his patience and support throughout this long endeavor. I thank my father, Rudolph T. Meola, for teaching me the value of education and for giving me the opportunities I've had that led me to this point. I will never be able to thank my mother, Sharon B. Lamb, sufficiently for all her support that has made completing this project possible but I will keep trying. I also would like to thank my cousin Domenic Vecchiarelli for his unfailing enthusiasm and support of this project as well as my life-long friend, Carol Provoncha, for cheering me on start to finish. Last, I thank Vann and Chiara, my children, for loving their mommy even when I said I had to work far more often than they wanted.

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LIST OF ABBREVIATIONS

CBNRM	Community-Based Natural Resource Management
CI	Conservation International
FVA	Fundação Vitória Amazônica
IBAMA	Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis The Brazilian Institute of Environment and Natural Resources
IDSM	Instituto de Desenvolvimento Sustentável Mamirauá The Mamirauá Sustainable Development Institute
INPA	Instituto Nacional de Pesquisas da Amazônia The National Institute of Research on Amazonia
IPAAM	Instituto de Proteção Ambiental do Estado do Amazonas Institute of Environmental Protection of the State of Amazonas
IUCN	International Union for the Conservation of Nature
NGO	Non-Governmental Organization
PRA	Participatory Rural Appraisal
RDSM	Reserva de Desenvolvimento Sustentável Mamirauá Mamirauá Sustainable Development Reserve
SDR	Sustainable Development Reserve
TNC	The Nature Conservancy
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNDFW	United Nations Development Fund for Women (replaced by UN Women, the United Nations Entity for Gender Equality and the Empowerment of Women)
UNEP	United Nations Environment Programme
UNPF	United Nations Population Fund
WCS	Wildlife Conservation Society
WEDO	Women's Environment and Development Organization
WWF	World Wide Fund for Nature

CHAPTER 1:

MAKING CONNECTIONS: COMMUNITY-BASED NATURAL RESOURCE MANAGEMENT AND GENDER STRUCTURE¹

Statement of the Problem

This dissertation examines how Western² gender structure, the stratified system by which men and women are organized in society, is both transformed and reproduced by participatory conservation interventions in the Mamirauá Sustainable Development Reserve (MSDR), Amazonas, Brazil. Though participatory conservation was developed in response to critiques of conservation as authoritarian, even imperialistic, it has so far produced varying results for different stakeholders. Advocates claim that community involvement not only empowers but is necessary for project success. However, a counter-critique has also arisen, posing the argument that the outcomes of participation, often presented as successes, are neither inherently benign nor equitable (Cooke and Kothari 2002; Leach 1992; Rocheleau 1995; Rocheleau et al. 1996; McDougall 2001; Agarwal 2001, 2003). Participation, the critique goes, works out better for some than others. It also may be empowering in some ways for certain

¹ Throughout this dissertation, the use of the words “structure” and “structuralist” are used in the tradition of the sociological discipline to refer to a “pattern of constraint on practice inherent in a set of social relations” (Connell 1987:97). The term “structure” is defined in more detail in Chapter 3.

² Feminist scholars debate the nature of gender, including whether gender as a universal, theoretical concept is inherently stratified. My theoretical sympathies lie with scholars such as Risman and Lorber who argue that the existence of a system based on ascribed difference is inherently unequal, yet these authors do not insist that gender is immutable nor do they assert that there has never been, or can never be, a gender-egalitarian society. Though their work, particularly Lorber’s, includes references to hunting and gathering societies, their argument asserting gender structure as hierarchical due to the inherent categorization based on ascribed difference appears to the reader to be primarily situated within Western or modern societies. See Risman (1998:5) and Lorber (1994:35) for their elaborations on this argument. Though there may be isolated cases where non-hierarchical gender systems have been identified, such as the Lahu society in Southwest China (Du 2003) and others cited in Du’s ethnography, this dissertation is situated in a gender-stratified society where gender inequality is evidenced in various ways including labor burdens, private and public decision-making, autonomy, and income generation.

individuals or groups while not for others. As explored in this dissertation, women may be one of the groups that do not benefit equally or perhaps are further burdened by participatory programs. Local participation is clearly no magic bullet. That said, its successes, even if considered limited or tentative, are cause for optimism and further research. In a world of growing populations and increasingly limited natural resources, the prospect of marrying social justice with conservation is undeniably compelling.

In this study, I use a gendered lens to analyze the impacts of participatory conservation on local social organization. My main research question is: How does participatory natural resource management affect local gender structure? Generally, I am concerned with the social consequences of conservation initiatives for protected area residents—to what extent the participatory model is equitable for local people, particularly sub-groups such as women. More specifically, this study addresses how gender hierarchies are affected by program participation or exclusion. Using ethnographic and other qualitative methods, I investigate the transformation and reproduction of gender structure by analyzing how conservation initiatives shift the gender division of labor, involve and empower women, and impact family organization.

I chose the Mamirauá Sustainable Development Reserve because it's an area of exceptionally high ecological importance protected under a relatively new and very active participatory conservation model which I expected would present ideal conditions for identifying change. This reserve is considered a highly successful example of a co-managed protected area and is being used as a model for other reserves in Brazil. Mamirauá is particularly illustrative because the area is home to a significant human population whose livelihood the project aims to support through a combination of resource regulation, community development, and economic activities.

Last, yet of critical importance, the project actively involves women in many of its programs.

Definition of Key Terms³

Throughout this study, I use the key term *gender structure*, which I draw from the work of Barbara Risman (1998, 2004). Risman chooses the word “structure” to emphasize the plane on which we view gender as one that exists beyond the level of individuals. In this view, gender is a socially constructed hierarchical system of organizing society based on ascribed individual difference. However, Risman’s gender structure theory asserts that gender also exists within individual identities and is perpetuated through the social relations as individuals and groups interact. Risman (1998) states:

Gender itself must be considered a structural property of society. It is not manifested just in our personalities, our cultural rules, or other institutions. Gender is deeply embedded as a basis for stratification, differentiating opportunities and constraints. This differentiation has consequences on three levels: (1) at the individual level, for the development of gendered selves; (2) at the interactional level, for men and women face different expectations even when they fill the identical structural position; and (3) at the institutional level, for rarely will women and men be given identical positions.

I agree that gender is a systematic form of organizing society that lies outside of individual action yet also one that is constantly altered and reinforced by individual beliefs and group interaction. It is these three analytical levels that distinguish *gender structure* from *gender relations*. Gender relations occur at the level of social

³ Writing Conventions:

Italics are used when discussing the usage of a term or category, to indicate emphasis, when using a word in a foreign language or to indicate a scientific name. Quotation marks indicate a direct quotation, colloquialisms, or terms well-known in academia to have a specific meaning or to be associated with the ideas of a specific author. Single quotation marks are used to represent a direct quotation within a quotation. Book titles are underlined.

interaction and though they are molded by gender structure, as well as recursively contribute to its formation, relations are one site within a larger framework, which I refer to as *gender structure*. In this dissertation, I identify ways in which local participation in conservation programs both changes and perpetuates existing gender structure on these three levels.

Another key term in this study is *Community-Based Natural Resource Management (CBNRM)*, which is a broad term encompassing a number of related approaches, all of which view local participation as critical. This approach is based on the premise that local people have a greater interest in sustainable use of resources than outsiders; that local ecological knowledge is a valuable asset to management efforts; and that local forms of resource use are better suited to the management of those resources (Lowenhaupt Tsing, Brosius, and Zerner 2005). Community-based programs generally rely on a combination of resource use regulation, community development, and alternative economic activities. Within this approach, participation of local populations is viewed as necessary to the success of such projects.

This study is based on the premise that protected areas, like development projects, introduce a host of new institutions that structurally alter the material conditions under which local people pursue livelihoods and make resource use decisions. I also assert that exogenous organizations such as natural resource management agencies introduce new ideologies and opportunities for new social relations. Therefore, I argue that the type of protected area has import for social organization, including gender structure. The process of supporting sustainable livelihoods and involving local people in the management of their natural resources produces different social outcomes than traditional, exclusionary parks. This dissertation explores these outcomes from a gender perspective.

Before discussing the issues surrounding CBNRM, it is important to draw the connections between CBNRM and gender equality.⁴ I begin by outlining the global context of gender inequality as a way to frame the problems of inequality within development and conservation projects.

Male Dominance: The Global Context

The twentieth century saw great strides in women's equality. However, more than a decade into the twenty-first century, gender equality is a goal far from realized worldwide. Male dominance has been roundly documented throughout the world (Chhachhi 1986, Ortner 1996, Rubin 1975). "The ethnographic record is littered with practices whose effect is to keep women 'in their place'—men's cults, secret initiations, arcane male knowledge, etc." (Rubin 1975). Women represent approximately half the world's population and human resources, yet they do not share equally in opportunities, benefits, and rights. Seventy percent of the world's absolute poor are women, while approximately 20% of households worldwide are female headed (Rao 2004). In some countries, more than half of all girls are married before the age of 18. For example, in Niger 76% of girls marry before age 18, while in Ethiopia, some girls get married as early as age 7. Where reliable studies have been

⁴ I have chosen to use the term "equality" over "equity" throughout this dissertation due to its frequency of use in popular speech, policy documents, and the academic literature that has most strongly influenced this study. Though the roots of the word equality refer to sameness and parity, while equity implies fairness and impartiality, today the words are often used interchangeably. The meanings have been altered as they have been appropriated by different groups throughout history. For example, the women's suffrage movement strove for equality of rights for women. As a result of this appropriation, the term equality has come to be used to indicate fairness of outcomes despite its origins based in the concept of sameness. UN Women is the "United Nations entity for gender equality and the empowerment of women" (<http://www.unwomen.org/>). The Convention on the Elimination of all forms of Discrimination Against Women (CEDAW), a major international human rights convention, uses the term equality (<http://www.un.org/womenwatch/daw/cedaw/cedaw.htm>). Equality is the term chosen by the Council of Women World Leaders (<http://www.wilsoncenter.org/program/council-women-world-leaders>). Gender Equality is the term used by USAID to describe the development goal relating to gender justice. In addition, both Risman (1998:25) and Connell (1987:287), whose work has heavily influenced this dissertation, choose to use the term equality.

conducted, between 10 and 69% of women report they have been beaten by an intimate partner. Globally, 52% of women participate in the market economy compared with 77% of men. More than half of homes in rural sub-Saharan Africa do not have easy access to water, while women are responsible for providing this resource. Women are far from sharing equally in decision-making. They hold only 16% of parliamentary seats worldwide (UN Population Fund 2005).⁵ The global spread of the hierarchical economic system of capitalism has not reduced male dominance in general but rather has structurally reinforced it. Examples of lost ground are abundant. Technological “improvements” alienate people from the land and may raise the pace and quantity of women’s labor in order for them to keep up with new production systems such as the case of imported tractors in Sri Lanka where women were then forced to pick cotton twice as fast to maintain the same wages (Salleh 1994). It is women who reconstruct community and family health that has been compromised by industrial environmental hazards and accidents. Zimmer-Tamakoshi asserts that violence in Papua New Guinea has increased due to development-driven economic pressures and male resentment over women’s gains in freedom and equality. Prugl (1999) connects the spread of capitalism with the separation of home and work, thus creating the “housewifization” of women. Structural adjustment, a critical component of the integrated world market, has been blamed for placing the greatest burden on women through the reduction in food subsidies, the increase in cost of living due to increased imports, the dismantling of welfare programs, the privatization of critical resources such as water, devaluation of currency, etc. Women have been referred to as “social shock absorbers,” taking the heaviest hit from austerity measures (Lamphere, Ragone, and Zavella 1997).

⁵ http://www.unfpa.org/swp/2005/presskit/factsheets/facts_gender.htm

Furthermore, a lack of accounting for women's role in reproduction and production results in a distinct male bias in development policy. International development assistance, which increasingly overlaps with large-scale international conservation projects, is generally viewed as having commendable objectives. However, women's benefits in relation to men's are marginal. In part, this is due to women's economic invisibility. Neoliberal economic studies, which inform development policy, have traditionally been based on the concept of the "harmonious household," where a benevolent patriarch makes decisions and distributes resources for the benefit of the entire household (Becker 1981). This model of the household has been shown to be unrepresentative of much of the economic struggle for resources that goes on within households. In addition, the system of national accounts does not acknowledge reproductive labor as labor at all. Again, women are invisible in economic reports upon which much policy is based. Females are also heavily underrepresented in development agencies as well as representation at the local level. Conservation projects are situated within the same socially inequitable contexts and face the same challenges. As such, they have the opportunity to either reinforce existing inequalities or contribute toward their resolution.

The Goal: Gender Equality

Gender equality demands the dissolution of male dominance in all its forms: institutional, economic, political, cultural, sexual, and psychological. Essentially, gender equality refers to parity in *power* between men and women including parity of rights, opportunities, rewards, and responsibilities. In defense of gender difference, I will refrain from including parity of outcomes in this list. That is to say, I do not equate *equality* with *sameness*. Culture may inculcate men and women with distinct role preferences as well as different desires and interests. This often involves

inequality in power relations but does not necessarily have to. Dissolving all difference, if it were possible, could be oppressive to both genders. In lieu of sameness, I argue that equality fundamentally hinges on *power*, or the equal ability to exert one's will even against the resistance of others—and to resist the will of another in doing so (Weber 1978).

Equality entails parity in both civil and human rights including freedom from fear of sexual assault, the constant threat of which is a pervasive, insidious aspect of male domination. Rights also refer to living and working conditions, access to food, dignified treatment, and autonomy over one's body and reproductive behavior. Equality in political participation refers to parity in formal representation but also to equal opportunity to voice interests and grievances. This may imply radical changes in the current political structure. Equality of opportunities includes, among other things, equal opportunity to education, healthcare, and employment. The term *rewards* is purposely broad and refers to the equal receipt of any type of benefit. Equal pay for equal work is an obvious example. Social recognition of contributions and accomplishments is another, as is sharing in the fruits of collective activities. Responsibilities refer to equal share in workloads, not necessarily specific tasks. It does not necessarily require parity of specific tasks, roles or outcomes, i.e., equal does not mean *sameness* in every aspect of social life.

Different streams of feminism emphasize different aspects of equality. Liberal feminists (the original feminists) focus on reformation of the existing political and economic spheres to provide equal legal standing for women and equal opportunity in education, health, and employment. There is no questioning of the validity of the system in this view. However, this view neglects inequalities in cultural and domestic arenas. Radical feminism focuses on the psychological and sexual aspects of female subjugation, positing that economic forms of oppression are secondary. Marxist

feminists take a contrasting view where control of the means of production is the primary source of power that is used by men to subjugate women. The perspective I use to define equality is informed by Socialist feminism (Humm 1990). By combining aspects of Radical and Marxist feminism, Socialist feminists argue that male dominance is based on both sexist and economic oppression. In this view, men have a material interest in dominating women. To protect these interests they construct institutions to maintain their power advantage. However, Socialist feminists define economy more broadly than Marxists to include the economy of the household. Reproductive and sexual labor becomes an important arena in which domination occurs. Equality, for Socialist feminists, requires, among other things, equality of economic opportunities and responsibilities—in both the public and private spheres. They also acknowledge the importance of psychological domination and internalized oppression.

Broadly speaking, this dissertation explores the extent to which CBNRM moves us closer to gender equality as well as the ways in which it fails to do so. CBNRM arose in response to critiques of exclusionary, centralized forms of conservation. Over the last three decades, not only have the strategies for implementing park management been highly contentious but the very purpose of protected areas has been met with considerable debate. Previous to the 1970s, the main agenda of parks, particularly those founded on the Western conservation paradigm, was typically to preserve the natural resources therein for aesthetic, spiritual, and recreational use. These parks set aside large tracts of land where significant natural features, landscapes, ecosystems, and wildlife would be left unaltered by human intervention despite some cases in which humans had previously inhabited the area. As this vision of environmental protection was replicated in developing countries, local peoples were often disadvantaged, if not wholly displaced. Critiques of this fines

and fences model include the belief that a militaristic approach to conservation increases social inequality and results in heightened conflict (Brandon, Redford, and Sanderson 1998). The export of this park model to developing nations resulted in the accusation that this type of conservation is imperialistic, preserving biodiversity for the elite and the citizens of the developed world, while neglecting or worsening the situation of local residents.

The response was the development of people-sensitive protected areas and development projects as exemplified by the Man in the Biosphere initiative and Integrated Conservation and Development Projects, which attempt to conserve biodiversity while promoting sustainable development. The Brazilian Sustainable Development Reserve is a more recent version of an inclusive conservation unit. Advocates of this approach see protected areas through a more utilitarian lens, one where natural resources are valued for their economic potential and therefore need to be utilized, although sustainably, in order to ensure their value and ultimate protection. Rural people are believed to be the best stewards of natural resources due to their presumed long-standing historical relationships with the land; thus community participation is viewed as essential to achieving project conservation goals. Sustaining local livelihoods is both an independent goal within this approach and a means to conservation success. However, the success of this approach requires negotiation and cooperation between various players at different levels of political organization. Local residents must work in concert with local, regional, national, and international organizations. These socially complex management systems present many challenges and produce a range of outcomes for the multiple stakeholders involved.

As the foundational tenet of CBNRM, participation of local stakeholders is viewed as essential to both project success and social justice. In this view social equality, including gender equality, is tightly linked to empowerment via participation

and cannot be achieved without it. Participation has become a sacred cow, but whether participation really equalizes and empowers is debatable. Though it is widely accepted in development circles that participating is inherently better than not, a critique of participation has also arisen (Cooke and Kothari 2002). First, there is ambiguity about how *participation* is defined. Participation can vary from simple membership in an organized group (without any power) to active engagement where participants propose initiatives and share in decision-making. Agarwal (2001) has developed a useful typology of levels of participation:

- Nominal participation—Membership in the group
- Passive participation—Being informed of decisions ex post facto; or listening only
- Consultative participation—Being asked opinions without guarantee of influencing decisions
- Activity-specific participation—Being asked to (or volunteering to) undertake specific tasks
- Active participation—Expressing opinions whether or not solicited, or taking other initiatives
- Interactive (empowering) participation—Having voice and influence in the group's decisions

The type of participation clearly denotes differing degrees of power-sharing and can result in differential opportunities for agency and benefits. All of the forms of participation in Agarwal's typology, except possibly the last, imply unequal power relations between the managing agency and program participants. Even "interactive (empowering) participation," when actors have influence in the group's decisions, does not necessarily mean they have the power to control the direction of initiatives and set agendas. The power differential between resident populations and global elites

creates the possibility that participation can be used as a tool to more efficiently implement pre-determined agendas set by Western policy-makers rather than to empower local people.

CBNRM also presents the possibility for some community members to hold a greater degree of participation than others, which again can create conflict based on unequal power relations, in this case *between* community members, including between men and women.

As this dissertation demonstrates, CBNRM sets in motion both intended and unintended changes in social organization that are not necessarily beneficial for all stakeholders. One of the challenges of CBNRM is that communities are not homogenous but are highly stratified along lines of gender, class, ethnicity, age, etc. These differences shape individuals' perceptions of the value of biodiversity and sustainable resource use. They also are key factors in shaping the material constraints on individual livelihoods and therefore also affect actors' ability to refrain from pursuing short-term gain at the expense of environmental stability. When programs aim to empower local communities the objective must be further specified to indicate whether it is individuals, groups, or sub-groups that are intended to be empowered. Though social equality is the goal, power differentials may be maintained either by managing agencies or by certain segments of the local population (Cooke and Kothari 2002; Leach 1992, Rocheleau 1995; Rocheleau et al. 1996; McDougall 2001; Agarwal 2001, 2003). For example, pre-existing or introduced inequalities in power relations may cause women as a whole, or important sub-groups of women, to be excluded from project participation, decision-making, and benefit-sharing. It is not equally as easy for all members to participate. For example, women with small children, the poor, and those who live distant from meeting places all face serious constraints to participation. They may not be able to afford the time, expenditure of energy, and

other resources to participate. So, even if projects are explicitly designed to be inclusive, without somehow compensating for these pre-existing and unequal constraints among community members, participation will not be engaged in equally. On the other hand, participation in livelihood projects may be not a result of choice (or agency) but instead an expression of necessity when such projects are seen as the only means of accessing scarce resources. This was clearly the case in Mamirauá, where numerous informal conversations and field observations showed that local people view the NGO as a benefactor. Participation was linked to the potential for gain in some form.

Project exclusion may also lead women to bear a disproportionate economic burden due to resource restrictions where gender relations tend to favor men's access and control over resources. When management decisions involve the restriction of local access to particular resources that are traditionally harvested by women, it is the women (and generally not the decision-makers) who will pay the price of added time and labor to harvest those resources elsewhere or make necessary accommodations. So whether, and to what extent, pre-existing local organizational structures are used in program implementation has important equality implications for CBNRM participants.

Different sub-groups also have differing relationships with the natural environment that are influenced not only by local norms (such as the gender division of labor) but also by external market influences. Collective community interest may be fragmented by the broader economic and political structures in which they are embedded. Barret et al. (2001) assert that community-based management works best in the presence of strong local systems of social control to enforce access restrictions.

Both the dynamic nature of communities as well as impacts from exogenous forces can present challenges to local-level management. Demographics, institutions, and social norms are all dynamic and influenced by outside interventions. For

example, large-scale migration of adult males in pursuit of wage labor may lead to changes in patterns of family organization, local natural resource use, integration into the global economy, household and community-level division of labor, and gender roles. Male out-migration is an example where exogenous forces can overpower and dissolve local institutions, decreasing the potential of successful and equitable CBNRM. Community-level management systems may be challenged by these outside influences because though responsibilities may shift, legal rights to resources do not automatically change in accordance. Women, for example, may take on more responsibilities, both for household provision and community-level activities, but not be granted the authority to make necessary management decisions. In the absence of sufficient legal authority over resources and strong local institutions, CBNRM is unlikely to be successful.

Another constraint to successful local-level management is the discrepancy in scale between local jurisdictions and ecosystems. Typically, community-based projects will only encompass a portion of any ecosystem. Generally speaking, centralized systems are better equipped to raise funds, monitor species population dynamics, and conduct widespread education programs. This is one of the potential strengths of co-management, where local and national (or international) institutions collaborate by pooling their strengths. This is the type of management at Mamirauá.

CBNRM, and co-management in particular, is designed to avoid the pitfalls of centralized, authoritarian approaches that have been criticized for ignoring the needs of local stakeholders, undermining existing resource management systems, and restricting local authority, all of which can result in increased tension between government and local residents and ultimately increased environmental degradation. To avoid heightening conflict between communities and the state, CBNRM is intended to respect and reinforce local, informal institutions. However, managing

organizations are still bound by the formal, bureaucratic, and economic systems that are not democratic. CBNRM tends to formalize the informal institutions with pre-established, often Western, donor-driven agendas. Despite the popular rhetoric emphasizing local participation, many of these projects still require that local institutions adjust to external institutional requirements such as funding cycles and the impetus to deliver products.

Another problem with CBNRM is that most participatory projects have been initiated and managed from the outside. They tend to focus on short-term objectives and overlook the constraints on local institutions (Sayer 1991). External political interests and bureaucratic regulations may erode communal authority and the integrity of local institutions.

Participation and consensus goals conflict with the goal of timely implementation of short-term goals and the need to maximize quantifiable achievements. This leads to the standardization of participatory methods. There is an inherent discrepancy between local participation and sustainability goals and the emphasis on project accountability, proper use of funds, and delivery of short-term benefits. Furthermore, social hierarchies, theoretically challenged by CBNRM, become re-asserted in implementation in an effort to increase efficiency. For example, if a project staff member spends too much time trying to uncover local knowledge or achieve highly engaged levels of participation, eventually their productivity will be called into question by superiors who have to answer to donors.

Another potential problem with local participation is that local needs may be shaped by perceived project deliverables, i.e., what local people feel they might be able to get from the management agency. CBNRM based on local knowledge and local needs but needs as well as willingness to participate can be structured by the

perception of realistic project deliverables. Objectives that may on the surface appear to be indigenous may really be shaped by outside opportunity.

In addition to these critiques of CBNRM, inclusion of women and other marginalized groups has often been neglected despite the popularity of participatory rhetoric. Participatory models strive to be people-sensitive, providing local residents with access to natural resources while still preserving biodiversity; however, these projects are not necessarily *gender*-sensitive. Women are often the carriers of the heaviest burdens due to resource restrictions directly linked to the sexual division of labor (e.g., carrying firewood and water). Women's labor may also be harnessed for conservation projects without remuneration or direct benefits, at times causing women to neglect family duties or to forgo opportunities for paid work.

An inherent challenge to the participatory approach is that it is based on consensus and common needs but that women's knowledge, priorities, needs, and values are often different from those of their male counterparts, who typically have significantly more representation and decision-making power. Even when interventions are designed with the intention of including both men and women, traditional social norms may dictate that consultation with the community means with the men, who do not necessarily represent women's needs. Furthermore, women have often been treated as a homogenous group with a singular set of needs without considering variation created by other axes of difference such as age, class, kinship, and ethnicity.

Even though the connections between gender equality and environment have gained increasing attention in international development in recent decades, interventions have not been entirely successful and have often been counterproductive. At times they have neither improved women's access to resources nor resulted in the successful achievement of conservation objectives (Green, Joeke, and Leach 1998).

In fact, conservation projects have been known to fail if they do not successfully harness female labor and to result in increased burdens for women when they do. Women have been treated as cheap, flexible labor without regard for their heavy workloads and often inflexible schedules. At times, projects have drawn on women's labor without providing direct benefits to the women involved. Additionally, women's representation in mixed-sex community organizations, municipal administrations, and development/conservation projects remains unequal. Even when they do participate in mixed-sex projects, women tend to have little decision-making power. Women are also underrepresented at higher levels of decision-making such as protected area and NGO administrations, government agencies, and donor organizations. When gendered realities are not acknowledged in policy and project design, the results may include project failures, introduction, re-enforcement or increases of inequitable social arrangements, and degraded natural environments.

Though participation is generally viewed as positive, there are some conditions under which inclusion can have negative impacts. Here the issue is not who is excluded but who is *included, in what ways, and with what consequences*. For example, inclusion can also have negative impacts on the economically and culturally marginalized. Those who have the most reason to question the existing economic and social structures are brought into the program and encouraged to participate, but they are doing so within the existing structures responsible for their marginalization. They are given opportunity to participate but they are told *what they are participating in* (e.g., a park project, a water project, etc.) and the tools of participatory management, such as Participatory Rural Appraisal (PRA), are by now already standardized. An example of this issue in PRA is the use of a standard set of mapping activities as a way of mining local knowledge and encouraging participation. Everyone present is encouraged to give input into the making of the map, which is not made permanent by

drawing on paper until all members have agreed through consensus on what has been constructed. However, though the participants can draw what they want, they were told what the drawing is to be about. As argued by Henkel and Stirrat (2001), “PRA provides the grid: the local people can fill it in as they like.” This results in the formation of knowledge that is ultimately shaped by the Western view of development through the structuring of the activity. The knowledge produced is then passed off as local and can be used to legitimate pre-established program goals. By controlling the participation of others, those structuring the process can influence and monitor actions that may be viewed as indigenous and voluntary.

Inclusion in projects may also result in coerced and unequal extraction of labor or inequitable benefits and can negatively impact women. Women have been expected by project staff, their male counterparts, and community leaders to participate in projects through contributions of additional labor or compliance with new regulations. This disjuncture between decision-makers and laborers can lead to failed projects.

Though political participation can be strategically advantageous to women (and other sub-groups), adding decision-making and participation responsibilities to women’s typically heavy and inflexible work schedule can increase burdens. This can result in neglect of other activities including family responsibilities and economic endeavors any of which could have more immediate negative consequences for them. Women may not be anxious to join in projects and meetings when entrenched gender roles make decreases in existing responsibilities unlikely. This is also clearly the case in Mamirauá, where women’s engagement in leadership activities was only undertaken by those women who were able to find alternative forms of child care, or who no longer had these responsibilities.

Who participates, and the extent of their participation, is also affected by the fora in which planning and implementation are conducted. The public nature of

participatory planning can also exacerbate inequality. The fact that planning activities are public institutionalizes and formalizes some systems of decision-making and knowledge production while others are suppressed. Informal, kinship-based, illicit, and other socially embedded systems are neglected. The formal, public nature of participatory activities can reinforce pre-existing hierarchical power structures by ignoring that some people will be more empowered than others to participate in the public environment. There is variation in possibilities for expression in these public fora. Pre-existing power differentials based on class, kinship ties, age, ethnicity, gender, and other forms of difference are not left at the door when public participatory activities occur. Some people may even be more disadvantaged in such decision-making environments when they have previously accessed resources, including community knowledge, and influenced decisions in indirect ways such as via male kin or representatives.

One affect of the shift toward local participation is the resulting shift of responsibility for outcomes onto local people. This is another way for political, economic, and project leaders to maintain their positions of power. When projects are deemed to be the creation of local people, then managing agencies can wash their hands of the negatives outcomes.

Finally, yet another critique of participation is that once people become formally involved in programs, their activities become more regulated and monitored by outsiders. This can be disadvantageous for those who are unable to comply fully with the newly imposed restrictions. Not only are people who may depend on informal or illicit economies more vulnerable to sanction once they become more visible through project participation, but the very projects supposedly intended to assist them may impose unfavorable rules for certain groups. For example, Zwarteveen and Neupane (1996) as cited in Cooke and Kothari (2002) document how some Nepalese

women found it preferable to access water through male kin, neighbor networks, or stealing than to participate in the formal community water project. This process of formalizing resource access is underway at Mamirauá through the introduction of “economic alternatives.” The managed forestry and fishing programs are particularly good examples as both these activities are traditional uses of the environment. The difference is that now resource extraction is regulated and bureaucratized, which presents new challenges to local people as discussed in Chapter 4.

Conclusion

Participation has the potential to empower people and improve project results, yet it also has its pitfalls. This dissertation aims to investigate how participation in the context of a natural resource management and sustainable development project affects women, their relations with male counterparts, local social organization, and more generally the gender structure that frames their lives.

Overview of the Dissertation

This first chapter has outlined the sociological problem on which this dissertation focuses and provided the theoretical context within which the issues are situated. Chapter 2 describes the field site including the physical area, the legal and political structure of the Reserve within which the study is situated, the historical context, and the programs that have been introduced by the Mamirauá Institute. This chapter also details the methodology used to execute the study. Chapter 3 discusses the theoretical issues surrounding women’s participation in CBNRM, draws the connection between participation, empowerment, and gender structure, and situates my question within the extant literature. Chapters 4 through 6 comprise the empirical portion of the study. In Chapter 4, I describe the gender division of labor as it relates to natural resource use

within the Mamirauá Reserve, how program participation has shifted particularly women's labor patterns, and the impact this has had on gender structure. Chapter 5 outlines how the introduction of a participatory conservation program to the Mamirauá Sustainable Development Reserve in Amazonas, Brazil has had a striking impact on gender relations, not only increasing women's participation in organized groups but also female leadership in social, economic, and political spheres. In this chapter, I investigate the opportunities offered to women through resource management organizations, the environmental and social factors that condition their ability to assume leadership roles, and the assistance they receive or lack in overcoming barriers. The chapter concludes with a discussion of how the social structures that shape women's lives vary between leader and non-leader categories and how conservation programming might be altered to increase both women's participation and leadership. Chapter 6 examines how the integrity of the family unit is reinforced or undermined by participation in programs related to the management of the Reserve. I focus on how women's relationships to their families are altered as they engage in wage labor and productive associations. This chapter also discusses some of the unintended consequences of these alternative economic activities on traditional livelihood practices, the intergenerational dissemination of knowledge, and future aspirations of young people. In Chapter 7, I present the conclusions of this study, discuss the implications of my findings for gender equality and the long-term sustainability of this conservation model, and suggest questions for further study.

CHAPTER 2:

THE MAMIRAUÁ FIELD SITE AND RESEARCH METHODOLOGY

Introduction

In this case study, I used a qualitative approach originally guided by feminist political ecology (Rocheleau et al. 1996; McDougall 2001). Feminist political ecology considers the social, political, and economic contexts within which environmental policies are created. As a fundamentally structuralist approach, it addresses how social divisions, and gender in particular, influence the uneven distribution of resource access and control, and examines local experience in the context of global change. The main themes to be investigated using this perspective are gendered rights, gendered responsibilities, and gendered institutions (at household, productive group, community and Reserve-wide levels). It was the feminist political ecology literature that helped me formulate my initial research questions. As the research process progressed, I drew on several feminist theories of gender structure to refine my question and choose specific aspects of the gender system to investigate.⁶ I approached the broad research question of how participation in conservation-related activities affects gender relations by roughly organizing the three empirical chapters around Connell's three structures of gender relations: labor, power, and cathexis. These categories correspond to Chapter 4 (Natural Resource Use Division of Labor), Chapter 5 (Women's Participation and Leadership) and Chapter 6 (Impacts on Family). Risman's Gender Structure Theory (1998, 2004) was also critical in helping me conceptualize how gender structure is reproduced and transformed on individual, social-relational, and institutional levels.

⁶ The works of Risman (1998, 2004) and Connell (1987) were particularly influential in shaping the questions I used to analyze how gender structure is impacted by conservation-related programs. Both authors' work is discussed more fully in Chapter 3.

These theoretical perspectives framed my research question and my empirical objectives. Generally, I wanted to know how the participatory conservation project at Mamirauá impacts female residents in distinct ways and what effect this has on existing power relations between local men and women. I also sought to understand the extent to which conservation programs facilitate women's engagement in natural resource management. More specifically, I was interested in how women's increased organization and new income-generating activities affect the traditional natural resource use division of labor, the integrity of the family unit, and women's access to leadership opportunities in the management of the Reserve, themes organized around Connell's three structures of gender relations.

Additionally, I wanted to know whether these conservation programs increase or change women's conservation behaviors, particularly those behaviors directly associated with economic activities introduced by the conservation programs. Last, I wanted to understand the drawbacks to participation in these programs, for accepting the imposition of natural resource use restrictions associated with living within a protected area, and for taking on the responsibility of co-managing the Reserve.

Unpacking this research question, I needed to address four empirical objectives:

- 1) Document the management strategy for the MSDR
- 2) Understand gendered resource use
- 3) Document gender relations in Reserve communities
- 4) Assess impacts of the conservation project

Reflecting upon these objectives, I adapted various qualitative and feminist methodologies to develop data collection methods appropriate to my interests. The study depended primarily on in-depth, semi-structured individual interviews, though I also used several other methods to gather data. In addition to interviewing, I conducted focus groups, resource mapping activities, and archival research. I also documented

my field observations, attended meetings where I observed the interactions of participants, and took hundreds of photographs. Though most of the data for this study is qualitative, archival research and interviews with Reserve managers were used to gather quantitative, as well as qualitative, data on the history and structure of the Mamirauá Reserve, the Mamirauá Institute's conservation program, and levels of resident participation. To address each of my four objectives, I triangulated by using several of the above methods in varying combinations. In the following paragraphs, I elaborate on the role each objective plays in addressing my research question and I outline the specific combination of methods used to address each objective. In the latter part of this chapter, I then detail specifically how I conducted each method.

In order to understand how Reserve residents are affected by conservation interventions, I first needed to understand the character of the Reserve and the conservation effort. This included researching the history of the creation of this type of protected area in Brazil and, specifically, the establishment of the MSDR. It also involved understanding the management plan for the MSDR including the co-management agreement between the state of Amazonas and the IDSM, the physical zoning structure of the MSDR, the restrictions placed on resource use within the Reserve, the political organization of management, the intended role of the local residents in management, the nature of the economic alternative initiatives introduced by IDSM into the economies of Reserve communities, and the goals of the IDSM's various programs within the Reserve. To obtain this information, I relied on archival research and semi-structured, individual interviews.

In a natural resource based economy, access, use, and control of natural resources are critical to individual well-being. In order to understand how initiatives for economic alternatives, restrictions on natural resource use, and participation in management decisions affect Reserve residents and the social relations between them,

it was necessary to first document which resources are used and controlled, by whom, and for what purposes. I used a combination of Gendered Resource Mapping (Rocheleau 1995), species-specific resource lists, in-depth interviews, archival research, and field observations to understand how resource use and control varies by gender.

To understand how male and female residents of the Reserve are impacted differentially by conservation interventions, I needed to address both gender norms and gendered power relations. The gender norms examined were those most directly linked to natural resource use: the division of labor; roles in family, community, and Reserve management; gender-specific behaviors and demeanor; autonomy; and mobility. Power relations were examined in the arenas of natural resource control and access; revenue control; formal representation at community and Reserve-wide levels; decision-making power at household, community, economic group, and Reserve-wide levels; leisure time; and work load. These issues were investigated using individual interviews, Gender Analysis focus groups⁷ and oral life histories, as well as participant observation, which involved attending both formal meetings and social events of various sorts while living in the Reserve.

The impacts of the conservation project on Reserve residents were investigated by following the structure of the project, which can be divided into resource restrictions, community development, and economic alternatives. I assessed the impact of restricting resource use by using in-depth interviews and key informant interviews, reviewing project reports, and resource mapping. To gather data on the effect of economic alternative and community development programs, I reviewed meeting

⁷ Adapted from Gender Myths focus group (Kindon 1993).

minutes and program records,⁸ conducted interviews, and made observations in the field. To document decision-making and representation at the household, community, and Reserve-wide levels, I used interviews, reviewed project reports, and made observations at meetings. One affect of conservation interventions that particularly interested me was to what extent IDSM programs introduced women into more leadership roles. Women's representation on Reserve committees was assessed through reviewing project reports and other IDSM records, interviews with Mamirauá Institute staff, and interviews with local leaders. The quality of organized participation was measured using participant observation during community and Reserve management meetings. I used the participation typology developed by Agarwal (2001).

Site Selection and Preparations for Field Work

The characteristics I was looking for in a field site for this project reflected the theoretical issues I planned to address and included a protected area with a resident population; a natural resourced-based economy that was at least partially subsistence in nature; and an active, participatory conservation program where regulations were actively enforced, where there was also an organized initiative to implement alternative livelihood strategies, and where women were included in at least some activities.

I developed this list of criteria for my field site from the theoretical questions I wished to address in my study. First, to address the question of how people living

⁸ Program records reviewed included the employment records for the ecolodge for the year 2005 and sales records for the Peixe-Boi Artisan group for the year 2005. This allowed me to assess the ratio of men to women working at the ecolodge as well as their respective earnings. The artisan sales records allowed me to evaluate the ratio of male to female artisans in the group and their earnings from selling crafts. Meeting minutes for the Peixe-Boi Artisan group were also reviewed for the year 2005.

inside protected areas are affected by participatory conservation initiatives, including how gender norms and gendered power relations are affected, I needed to find a protected area managed under this participatory conservation style with an actively engaged resident population. This is more challenging than one would think from reading literature on participatory conservation programs in protected areas. Many protected areas are currently managed in this way in theory, but this often amounts to written words on legal documents with little or no participation from local people in reality. So my first challenge was finding a protected area which was truly managed by local residents in conjunction with other resource managers, whether they were governmental or non-governmental. Following the main aspects of participatory conservation found in the literature (Western and Wright 1994), I defined active management as including three components: restrictions placed on resource use, community development, and initiatives for economic alternatives. To be *participatory* natural resource management, local people need to be involved in at least some of these activities. Ideally, they would participate in decision-making and engagement in all three components. For my particular interests in gender differences, it was essential that both men and women be involved in at least some aspects of management. I sought an area with an economy based on natural resource use because then both restrictions on resources and economic alternatives (focused on natural resource-based activities) would directly impact conservation success and the welfare of local residents.

I then set out to find a site with these elements in a setting in which it was logistically feasible to conduct such a study. I chose to limit my search to Latin America because of my training in the Portuguese and Spanish languages. I began with literature and internet search. I examined the websites of various large conservation organizations (e.g., Conservation International, The Nature Conservancy,

The Wildlife Conservation Society, World Wildlife Fund) and identified projects that seemed appropriate. This was followed up with letters to staff members at these organizations where I requested more detailed information about the nature of the conservation programs in these locations as well as initiated a discussion about the possibility of conducting research there. This personal correspondence was invaluable in identifying which protected areas were truly managed with the participatory approach, since much of the information one finds on the internet is both very general and reflects the intended management strategy, not necessarily the actual activities occurring at that location. By corresponding with NGO staff at these various conservation organizations, I was able to narrow my search to protected areas where someone who presumably has firsthand knowledge could describe the degree to which the program was or was not participatory.

After conducting this extensive literature search, I made several exploratory field visits to Latin America. I traveled to Ecuador in January 2004, where I visited two protected areas and did further research on a third. I had made contacts with Randi Randi, a local NGO working with conservation and women's issues in the highlands. This group accompanied me to Sangay National Park outside of the city of Cuenca. Theoretically, Sangay has a participatory form of conservation; however, when we arrived the only indication of a conservation area was a rusted sign pronouncing the entrance to Sangay National Park. In fact, the locals we then visited had torn down the sign placed near their village—an indication of their sentiments toward the park. From what I learned on that field trip, there was little or no formal conservation work going on in Sangay and the local people were participating by rejecting the establishment of the park.

I then traveled to the Galapagos National Park, also attempting to implement a form of participatory conservation through involving the local fishermen's

cooperatives in decision-making about the management of the fisheries. Though the local people here had some voice in management decisions, they were also involved in a power struggle with government, staging protests such as capturing the Charles Darwin Research Station and holding researchers hostage and similarly taking over the one gas station on the island. I was sure that there was an interesting story to be told about local involvement in conservation at this site. However, I was searching for a location where local people and authorities were involved in a more harmonious co-management effort so as to examine how a seemingly successful co-management project affected the local male and female residents differently. I also wanted to find a location where the local people were directly dependent upon the natural resources for their livelihoods. In the Galapagos, this would apply to the fishermen and possibly other groups as well, but it wasn't clear that there was an active conservation program involving women. Randi Randi had published some information about a women's project in the Galapagos, but upon arrival there, it didn't seem all that active, so I opted to continue my search for a field site. I had intended to also visit a third park in Ecuador located in the eastern part of the country in the Amazon. I had read about the park involving local people in a successful ecotour project, but travel to this park was logistically difficult and costly. The local people there were also indigenous, known to be historically highly unfriendly to outsiders, though clearly that was changing, and generally did not speak Spanish, all of which caused me to abort the effort to make the trip to this last Ecuadorian possibility.

From there I returned to my internet search and eventually focused in on three possibilities in Brazil. In August 2004, I returned to Brazil to visit these three protected areas which, according to literature posted on the internet, had participatory conservation programs. The first I visited was Fernando de Noronha, a small group of islands off the northeast coast of Brazil. By luck and persistence, I managed to secure

an interview with the Park Director, an employee of the Brazilian Institute of Environment and Natural Resources (IBAMA). This interview revealed that the vast majority of the land on the islands is managed by the federal government (IBAMA), with only the residential section of the one town having a sort of participatory management by local cooperatives. It quickly became clear that this was not the type of protected area I sought.

Then, I traveled to Manaus, where I visited Fundação Vitória Amazônica (FVA), an NGO working in Jaú National Park. Again, I had come with the belief based on literature posted on the internet that this park was managed in a participatory manner with local people, FVA, and IBAMA. However, discussions with the staff members at FVA revealed that, according to Brazilian law, people were not legally allowed to inhabit national parks and that the resident population of Jaú might eventually be removed. Jaú is also extremely isolated and requires a boat trip of several days up the Rio Negro from Manaus, so once again, I moved on to my next possible field site. This is where the study was ultimately conducted.

Field Site: The Mamirauá Sustainable Development Reserve

I originally learned of Mamirauá Sustainable Development Reserve through the Wildlife Conservation Society (WCS) website. The WCS Brazil page reads:

The Mamirauá Sustainable Development Reserve (SDR), in the Amazon basin, is a world-renowned example of how to effectively conserve wildlife while boosting the quality of life and economic development of local villages, and the model is being replicated throughout the Amazon (WCS 2008).⁹

From there I read the Mamirauá Institute website, which outlined an extensive and very active participatory conservation program. Months in advance of my August

⁹ <http://www.wcs.org/globalconservation/latinamerica/brazil> (accessed March 5, 2008).

2004 exploratory field trip, I had written to several staff members of the Wildlife Conservation Society and then directly to staff members of the Mamirauá Institute discussing my interest in potentially conducting a research project in Mamirauá. Despite interest in my project, I was unable to make a fixed appointment in advance with anyone at the Mamirauá Institute. Upon my arrival in Tefé, the town where the Institute is based, I went to the Institute and began asking for the staff members with whom I had communicated. I was able to speak briefly with several staff members but was not granted access to the Reserve. I was given the impression from these discussions that the IDSM has authority to determine who may enter the Reserve, a fact that I later learned, through a contact at the Instituto de Proteção Ambiental do Estado do Amazonas (IPAAM), is only one interpretation of the co-management agreement between the state of Amazonas, the local residents, and IDSM. Because it was my last option before having to return to the drawing board, I persisted in my attempt to gain access to the MSDR as a field site. In order to do this, I decided to join the ecotour as a tourist, as this appeared to be the only way I would be allowed to enter the Reserve at that time. This allowed me three days within the Reserve as a tourist and the chance to visit one of the villages (which was Peixe-Boi, the village in which I ultimately focused my interviews). While on the three-day ecotour, I learned much about the Reserve and the conservation efforts within it. It seemed that Mamirauá was the first protected area I had visited where the activity on the ground really matched the claims of the propaganda that had led me there. With the exception of the logistical challenges and the difficulties in securing support from the Institute, Mamirauá seemed to be the perfect field site for my proposed study.

I found Mamirauá to be particularly illustrative because the region is of global ecological importance; it supports a significant human population and a natural-resource-based economy; the Reserve is theoretically and legally founded on the

participatory conservation model; and it has had organized conservation initiatives dating back to the 1970s. Also, of critical importance is that the Mamirauá Institute has been implementing organized conservation programs, including enforcement of regulations, education, and alternative economic activities, inside the Reserve since its establishment in 1990. In particular, some of these programs include the participation of women and some even focus specifically on gender issues and women's issues.

Though participatory conservation has gained extensive political support throughout the world, it is difficult to find protected areas where this model is actively implemented in reality. Given the extensive conservation and development programs underway in Mamirauá, this Reserve is especially valuable as a model from which lessons can be gleaned not only to improve efficacy within the Mamirauá Reserve but also for the world's conservation units in general.

As this study relied on in-depth interviews, proficiency in Portuguese was essential. Through university courses, 3 months of immersion training in Brazil, private tutoring, and daily practice while traveling in Brazil, I gained the necessary proficiency. I also had language assistance from two college-educated, bilingual Brazilians who worked with me during the field work and transcription stages.

Location of Field Site

The Mamirauá Sustainable Development Reserve (MSDR) is located in the Middle Solimões region of the state of Amazonas in northwestern Brazil, approximately 600 Km west of Manaus,¹⁰ as illustrated in Figure 1.

¹⁰ 02°18'S 066°02'W, <http://www.ramsar.org/sitelist.pdf> (accessed July 21, 2008).



Figure 1. Location of the Mamirauá Sustainable Development Reserve (IDSM).



Figure 2. Location and size of population centers in the Focal Zone, MSDR (IDSM).

The Reserve comprises 1,124,000 hectares. It is bounded by the Solimões River to the south, the Japurá River to the northeast, and the Auati-Parana to the west.

The nearest urban center is the city of Tefé (population 75,000), located 30 Km outside the Reserve to the southeast of the confluence of the Solimões and Japurá rivers. Several other urban centers fringe the Reserve including Alvarães, Uarani, Fonte Boa, and Marañ. The location of population centers and their sizes are indicated in Figure 2. The Reserve is completely composed of *várzea* habitat, or flooded forest. The main form of transportation is by river as there are no roads within the Mamirauá Reserve or connecting the nearby urban centers to other parts of Amazonas. Tefé and Fonte Boa can be reached by air from Manaus, the capital of Amazonas.

The administrative headquarters of the Mamirauá Institute are located in Belém, Brazil, a major metropolitan area near the mouth of the Amazon River along the Atlantic coast in northern Brazil. The regional headquarters that serve as the center of field operations are located in Tefé. IPAAM, the governmental agency with major co-management responsibilities, is located in Manaus. The geographical distance between administrative centers and the Reserve, as well as the difficulty confronted when traveling through this wetland environment, pose major challenges to management of this reserve.

Environmental Context

The MSDR is the first sustainable development reserve in Brazil. It is the only reserve located completely within the *várzea* and represents the world's last significant example of this unique habitat. The flooded forest, known locally as *várzea*, is most common in the upper reaches of the main Amazon River. Its waters originate in the Andes and carry a heavy sediment load, causing locals to distinguish these "white" waters from other nutrient-poor "black" waters, such as those of the Rio Negro. Each year the region floods with 10 to 12 meters of water for up to six months. The region is noted to support a high level of endemism as a result of the intense cycle of flooding

that has caused animal and plant species to develop adaptations to this dynamic environment. Due to the heavy sediment loads deposited during the floods, the area is also highly productive and has long been attractive to human settlers, particularly the river banks. Settlements traditionally have grown up along the rivers' margins, making access to travel corridors easiest (Ayres et al. 1999).

Major Land Formations

The MSDR has hundreds of lakes connected by waterways (*canos, paranás*) that, when flooded, blend into one another, allowing aquatic species to freely migrate throughout the flooded forest. The area is characterized by several distinct habitats created by the varying depth of floodwaters. The *restingas* are higher land masses along the rivers' edge that support large tree growth. Locals then divide the *restingas* into low and high areas (*restinga alta* and *restinga baixa*). The high *restingas* have a forest composition similar to the dryland Amazonian forest (*terra firme*), but they support very different species and high diversity of arboreal species. This type of forest represents about 12% of the MSDR. These higher areas generally flood 2 to 4 months of the year between 1 and 2.5 meters deep. The low *restingas* are a transition between forest and scrubland. These areas flood 4 to 6 months of the year up to 5 meters deep. These areas make up about half of the Mamirauá forest. The *chavascais* are lowland, swampy areas characterized by scrubby vegetation that flood 6 to 8 months of the year up to 7 meters and are nearly impassable.

Important Animal Species

The animal species of the MSDR differ significantly from those of the *terra firme* due to the annual inundation of up to 12 meters. Since all the dry land becomes covered, only aquatic mammals, arboreal mammals, or those very skilled at swimming can

survive the floods. Aquatic species include river otters, manatees, and pink river dolphins. Monkeys, tree sloths, bats, and jaguars can also navigate and survive the floods. However, animals such as peccaries, agoutis, pacas, tapirs, and armadillos, typically found in the terra firme, are not present in Mamirauá. The Reserve was originally created to protect one of its rare and endemic primate species, the white uakari monkey. The Reserve also protects the blackish squirrel monkey, another species endemic to the area.

Other species of note include the black caiman (*Melanosuchus niger*), the pirarucu (*Arapaima gigas*), tambaqui (*Colossoma macropomum*), river dolphins (*Inia geoffrensis*), and the giant Amazonian turtle (*Podocnemis expansa*). The MSDR now harbors Brazil's largest population of black caiman. This species was nearly decimated due to illegal hunting between 1940 and 1970; the caiman population has rebounded due to protection provided by federal law and the Mamirauá Reserve. There are now so many caiman within the Reserve that attacks on humans are not uncommon, and local residents, in coordination with IDSJ and IPAAM, have begun a managed harvest program. The program is still in the exploratory stages but the intent is to sell the meat and possibly the skin as well.

Fishing is a major commercial enterprise and basis of subsistence, both in the wider region and within the Reserve. Two fish species of particular importance include the *pirarucu* and the *tambaqui*. Both populations have been threatened by commercial fishing; however, due to the management plan within the MSDR, the pirarucu population has rebounded to a remarkable degree. Both river dolphins and turtles are protected within the Reserve but still suffer from human predation. Dolphins are not generally consumed, but their meat is sometimes used as bait in fish nets or sold across the Colombian border as a type of fish that is a popular delicacy in the region. Despite protective regulations, the five species of turtles within the Reserve

are under threat since their meat and particularly their eggs are highly prized among local diets.

History of Reserve

In the 1980s, Márcio Ayres, a Brazilian biologist, began studying the rare Uakari monkey as the subject of his dissertation. Noting the threatened status of the Uakari and the biological significance of the *várzea* ecosystem, he gathered the support of other scientists and lobbied the Brazilian government to create a conservation area. In 1990 (Decree N°. 12.836 March 9, 1990), the state of Amazonas created the Mamirauá Ecological Station, a conservation unit designed to provide integral protection, meaning one whose primary objective is to preserve the natural environment. This was beneficial for the Uakari and other species; however, it did not take into account the 5,000 human inhabitants and resource users of the new conservation unit. In fact, the regulations of the ecological station forbade human habitation and resource extraction. This was not the intention of Ayres and his colleagues, who used the best option available at the time within the current structure of conservation units. They believed that for such an expansive area to be protected over the long term, the participation and cooperation of local people were necessary. This is where the idea of the sustainable development reserve in Brazil was born. Ayres and his colleagues proposed the institution of a new conservation unit, one that would strive to balance biodiversity conservation with sustainable development. Biological research (and to a lesser degree, social research) has been heavily emphasized in the effort to protect biodiversity within Mamirauá. In 1996, under law number 2.411 of July 16, 1996, the state of Amazonas transformed the Mamirauá Ecological Station into the Mamirauá Sustainable Development Reserve, and a new type of conservation unit was born. In 2000, the Brazilian government instituted a new law outlining the National System for

Natural Conservation Units (SNUC) .¹¹ Under this structure, a sustainable development reserve (SDR) is defined as

A natural area that supports traditional populations, whose existence is based in sustainable systems of exploitation of natural resources, developing through long generations and adapted to local ecological conditions and that develop a fundamental role in the protection of nature and the maintenance of biodiversity. (Art. 20, Brazilian Federal Law 9.985, July 18, 2000; translation mine)

The basic objective of the SDR is to

. . . preserve nature and at the same time, secure the conditions and necessary means for the reproduction and improvement of the modes and quality of life and the extraction of natural resources of the traditional populations, as well as, conserve and perfect the knowledge and techniques of environmental management developed by these populations. (Art. 20, Brazilian Federal Law 9.985, July 18, 2000)

The MSDR Reserve falls under state jurisdiction. Management is the legal responsibility of the Institute for Environmental Protection of the State of Amazonas (IPAAM), but from the inception of the Reserve, a co-management contract was established between IPAAM and a non-profit organization that is currently the Mamirauá Sustainable Development Institute (IDSM).

Ecological Significance of Reserve

The MSDR is not only Brazil's first sustainable development reserve but is also the largest conservation area dedicated to protecting *várzea* habitat. It has become an Internationally Important Wetland under the Ramsar Convention of 1971. As the first SDR and a model which has showed significant promise, Mamirauá has inspired the creation of other SDRs within Brazil such as Amanã. Together with Jaú National Park

¹¹ Brazilian Federal Law N° 9.985, July 18, 2000.

and the Amanã Sustainable Development Reserve, Mamirauá is part of the Central Amazon Conservation Complex–Brazil. Contiguous with the Amanã Sustainable Development Reserve and Jaú National Park, these protected areas create the largest expanse of protected tropical forest in the Americas. The MSDR is listed as a World Wildlife Fund/IUCN Center for Plant Biodiversity, a Birdlife International Important Bird Area of the World, and is one of WWF’s 200 Priority Regions for Conservation. In 2003, the Mamirauá focal zone was inscribed into the World Heritage List as an extension to Jaú National Park under the Natural Criteria ii and iv.

The Structure of the Reserve

The MSDR in total is composed of 1,124,000ha (SCM 1996). In order to balance the objectives of sustainable use and biodiversity conservation, various zones have been created within the Reserve, each of which has its own regulatory system. The broadest division separates the Focal Zone from the Subsidiary Zone. The Focal Zone has 260,000ha (Schuster as cited in Ayres et al. 1999) and 499 lakes (Ayres et al. 1999). As fishing is the most important commercial and subsistence activity, one of the most important zoning structures implemented within the Focal Zone is the designation of lakes as either 1) Reproductive Lakes, 2) Subsistence Lakes, 3) Commercial Lakes, 4) Reserve Lakes, or 5) Municipal Lakes. This designation was one of the earliest regulatory structures instituted in the region, initially resulting from the work of the Catholic Church’s *Movimento Educação de Base*, (MEB) or Basic Education Movement in the 1970s, long before the creation of the MSDR. The Reproductive Lakes protected against fishing at all times and are intended to serve as safe harbors of propagation for fish species. These lakes increase the fish population throughout the region during the flood season, when fish can freely migrate between the flooded lakes. Subsistence Lakes are intended for subsistence use by local communities only.

These lakes are divided along lines of community territory so that each community has its own lakes in which only its community members are legally allowed to fish, and only for consumption in their homes.¹² Commercial Lakes are open to community members for commercial fishing, though regulations apply. Reserve Lakes are temporarily protected but are considered viable options for exploitation in times of hardship or to meet the expenses of the community. Municipal Lakes are open for fishing to anyone including professional fisherman from outside the Reserve. Professional fishing cooperatives from cities such as Alvarães, Tefé, Marãa, and Uarini are allowed to fish in these lakes subject to the maintenance of agreements with local communities within the Reserve.

On a broader scale, the Reserve is divided into 1) Protection Zones and 2) Sustainable Use Zones. The Protection Zones are areas where biodiversity conservation is given priority. No human habitation, visitation, or extraction is allowed in these zones. Only scientific study and protection efforts are allowed. The Sustainable Use Zones are divided into two sub-categories: a) Permanent settlement zones and b) Special management zones. Permanent settlement zones have previously existing communities located within them. These areas allow human habitation and modification to the environment as necessary for human existence such as clearing of pastures and fields for agriculture. Special Management zones are established to protect critical habitats and populations that are vulnerable. Several special management zones have been created to provide particular protection including bird

¹² Though this is the written rule, community members also fish in their subsistence lakes for the purposes of selling any extra fish they may catch. Though this is technically illegal, as long as the rule is not “abused” as socially defined by the community members and enforcement agents, they are allowed to sell fish in small amounts. I heard various accounts of volunteer environmental agents (who are generally community members of the area they patrol) letting fishermen pass with their catch as they head to market, as the money from the sale of the fish is considered essential to buy other household necessities.

rookeries, turtle nesting habitats, manatee feeding sites, and reproductive sites for the tambaqui fish. Special management zones have also been established to sustainably harvest the pirarucu fish and the black caiman. The harvest of these species within these zones is carefully monitored. There is also a special management zone established for ecotourism. This is the only area within the Reserve where tourists can visit.

Management of Reserve

Legally, the management of the MSDR falls under the responsibility of the State of Amazonas environmental protection agency, IPAAM. However, protection efforts at Mamirauá began with the efforts of the Catholic Church in the 1970s and then became institutionalized into law through the lobbying efforts of Márcio Ayres and his colleagues who founded the Mamirauá Project (later becoming *Sociedade Civil Mamirauá* and the Mamirauá Institute). Both the Catholic Church and the Mamirauá Project sought the participation of local residents when developing rules regarding the regulation of the Reserve, so the history of local participation in management dates back to the beginning of conservation efforts in the area. When the Reserve was legally established in 1990 as an ecological station, IPAAM handed over the management to the Mamirauá Institute (IDSM) as a co-management partner. IPAAM still has legal jurisdiction over the Reserve, but IDSM manages all the day-to-day operations in conjunction with local residents.

The Mamirauá Institute and Mamirauá Project

As noted above, the history of the Mamirauá Project dates back to the 1980s, when Márcio Ayres, in collaboration with a group of other researchers, conceived of a strategy to protect the area and began to elaborate the institutional structure for

management. The Mamirauá Project was the initial organization that later evolved into the Mamirauá Institute and the *Sociedade Civil Mamirauá*. In the decades that have followed, there has been a complex constellation of organizations involved in the administration of this protected area and an ongoing evolution of these organizations as well as their relationships to one another.

As mentioned above, the *Sociedade Civil Mamirauá (SCM)* was established in 1990 as a non-profit organization to administer the programs of the Mamirauá Project inside the Mamirauá Reserve and to pursue financial resources for these programs. The goals of this organization are to protect the ecosystems, promote the conservation and sustainable use of natural resources, and support the sustainable development of the traditional human populations of the Mamirauá region (www.Mamiraua.org.br, retrieved October 2, 2008).

In 1991 the Mamirauá Project was initiated. The first phase of the Project lasted from 1991 to 1996, during which numerous biological and environmental studies were conducted on topics including timber extraction, fisheries, agro-silviculture, seed dispersal, limnological and aquatic productivity, Uakari and howler monkeys, sloths, genetic variability of plants in *várzea*, and speciation of electric fish, to name only a few. There were also fauna, flora, and climatological surveys conducted. In addition, various social studies were completed including socio-economic, health and nutrition, education, and anthropological studies as well as population censuses. The initial Mamirauá Project was divided into five different programs: Core Operations (administration and operations); Terrestrial Systems (research on caiman, hunting, timber extraction, forest and terrestrial fauna surveys, and seed dispersal); Aquatic Systems (including studies in limnology, ichthyology, the fish market, and aquatic mammals); Socio-economic and Community Participation (including extension efforts in environmental education, health, and community

participation and socio-economic development); and Databases (managing the research data obtained from scientific studies and operating the Geographic Information System technology)(Mamirauá Management Plan 1996).

The studies of the first phase were used to gather data to develop the management plan which was approved in 1996. Phase two, 1996 to the present, is the implementation phase, with periodic scientific evaluations and consultations with local residents regarding the management decisions (www.Mamiraua.org.br, retrieved July 23, 2008).

The Mamirauá Institute was founded in 1999 to continue the work of the Mamirauá Project. During the early years of the Project, the main financial supporters of the Project were Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Overseas Development Administration (ODA), World Wide Fund for Nature-UK (WWF-UK), Wildlife Conservation Society (WCS), and Instituto de Proteção Ambiental do Estado do Amazonas (IPAAM) (www.Mamiraua.org.br, retrieved October 2, 2008). Substantial grants were received from the UK Department for International Development, the European Union, the Brazilian government, World Wide Fund for Nature, and the Wildlife Conservation Society (Koziell and Inoue, 2006). Over the subsequent years there have been many Brazilian and foreign organizational supporters offering financial, technical, in-kind, and other support. Currently there are 27 collaborators listed on the Mamirauá website including Instituto Nacional de Pesquisas da Amazônia (INPA) (the National Institute of Research of Amazonia), Museu Paraense Emílio Goeldi (MPEG) (Museum Emílio Goeldi), Insituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (IBAMA), Conservation International-Brazil, Columbia University, New York Botanical Garden, World Wide Fund for Nature–UK, Max-Planck Institute, Winrock International, the city of Tefé, the churches of Alvarães, Marã e Urini, 16a Brigada de Infantaria de

Selva- Tefé (military), and various others (www.Mamirauá.org.br, accessed October 2, 2008).

Community-based management usually involves some combination of restrictions on natural resource use, community development, and implementation of economic alternatives (Western and Wright 1994). The management strategy for the Mamirauá Sustainable Development Reserve fits this description well but with particular emphasis on research. The economic alternative programs introduced to the area include ecotourism, artistry, sustainable fishing, community forestry management, sustainable agriculture, and microcredit. Each of these will be discussed more fully below. The Mamirauá Institute also has programs referred to as Quality of Life and Participatory Development that focus on issues of health, education, capacity-building, and political organization. Integral to the Reserve management plan is a system of regulations and enforcement to maintain stable flora and fauna populations. Last, the Reserve is a site of extensive scientific research which is used both to monitor the success of the conservation programs and also as a locus of knowledge production for the scientific community.

Under the General Director, the structure of the Mamirauá Institute is divided into the Administrative Directorate, the Economic Alternatives Directorate, and the Technical-Scientific Directorate. The Administrative Directorate oversees most of the offices necessary for organizational maintenance such as human resources, accounting, operations, and finances. The Technical-Scientific Directorate oversees research, monitoring, ecotourism, and coordination of information. The Economic Alternatives Directorate includes the programs of community forestry management, sustainable agriculture, fish management, community development, artistry, quality of life including communications, and regulation enforcement. For purposes of this dissertation, I will focus mainly on the programs contained within the Economic

Alternatives Directorate and the ecotour program, as these are the programmatic areas which focus on regulation of resources (enforcement), economic alternatives (forestry, fishing, agriculture, artistry, and ecotourism), and community development (political organization, health, and education).

Community Organization and Development Initiatives

To date, the majority of management activities have been concentrated in the Focal Zone due to the logistical and financial constraints faced in such an expansive area. Figure 3 illustrates the political zones and location of program activity within the Focal Zone. The Focal Zone has been divided into nine sectors which generally correspond to the original political boundaries established by the Catholic Church when settling groups of disparate families into communities.¹³ It was easiest for IDSM to continue working with this basic political organization, so the idea of sectors and even their boundaries have generally been maintained. The goal was that local residents should have input into management decisions along with the IDSM staff.

¹³ Prior to the work of MEB, *coboclo* families lived spread out along the rivers' edges and did not identify themselves as part of an organized community group. MEB worked organize political units that came to be called *comunidades* or communities, and in some cases to relocate families from more distant locations to join these communities.

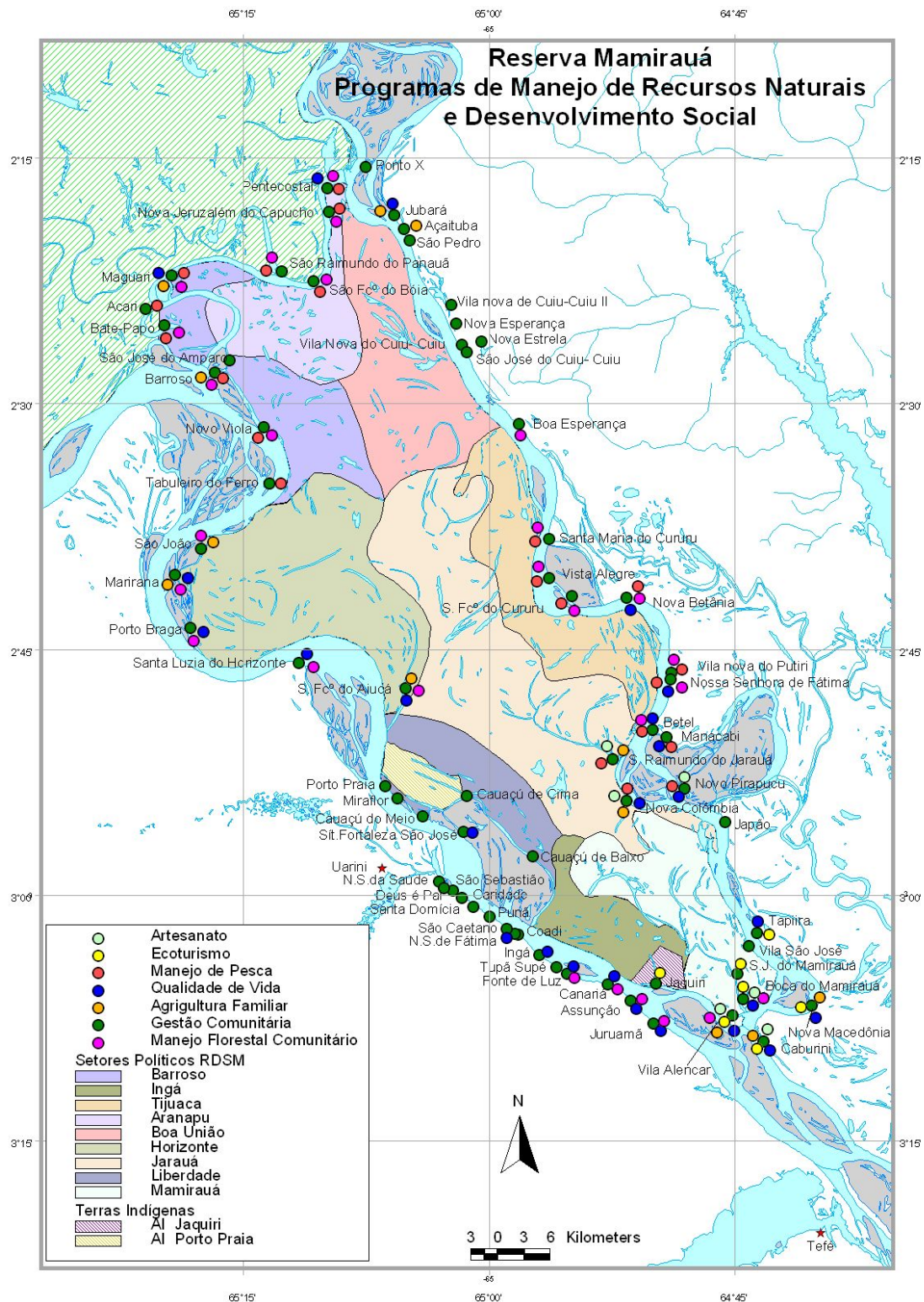


Figure 3. Political zones and program activity within the Focal Zone, MSDR (IDSM).

In addition to the alternative economic programs, the Mamirauá Institute has also implemented a Community Organization program and a Quality of Life program. The Community Organization program helps to include Reserve residents' participation in decision-making about natural resource use within the Reserve. Following the structure originally established by the Catholic Church to organize *riberinhos* into parishes, the Mamirauá Institute divided the focal zone of the Reserve into nine sectors. Reserve residents of each sector meet every other month to discuss and make decisions about issues concerning the Reserve but particularly their sector. Each community within the sector elects two people to represent them at the sector meetings. These meetings rotate among the communities of the sector so as to distribute the burden of travel and hosting meetings. The meetings are open to all members of the sector as well as people from other sectors if they wish to attend. Voting rights are the privilege of only those who live within the sector. Each sector elects a leader who will moderate the sector meetings and also represent the sector when needed. Sector meetings are also used to discuss Reserve-wide issues, which are then brought to the floor at the annual General Assembly. Each sector elects two representatives as voting members of the General Assembly. The sector leader is often, but not necessarily, one of these two people. The Assembly is open to participation of all Reserve residents, though only elected representatives may vote.

During the initial years of the Reserve, the General Assembly was the ultimate forum for decision-making regarding Reserve issues. Once a year, residents would meet with the various organizations involved in managing the Reserve to decide on matters of importance for the coming year. Originally, these meetings were held in Tefé, but then, in an effort to shift responsibility to the local people, the meetings were moved into the Reserve. Now they are hosted by a different community each year and last several days. Though the General Assembly still convenes each year, its authority

as the ultimate decision-making body was replaced in 2005 by the introduction of the *Conselho Deliberativo*, or Deliberative Council. Now the General Assembly is more a social event and forum for debate and discussion that informs the voting members of the *Conselho Deliberativo*, who actually make the decisions. When the state of Amazonas created the sustainable development reserve as a new form of conservation unit in its national system of protected areas, it was mandated that each sustainable development reserve establish a *Conselho Deliberativo* to oversee its management. The Mamirauá Institute's community organization program primarily works with supporting the participation and capacity-building of Reserve residents in the decision-making process of the Reserve. The Institute offers leadership and other types of training to elected representatives from the Reserve. Some monetary assistance and other logistical support are offered to these representatives to facilitate their participation. Many of the meetings that take place in the Reserve will also be attended by Institute staff that offer opinion and assistance. However, increasingly over the years, the organization with the sectors has become sufficiently instilled so that these meetings do not rely on the presence of any outsiders such as Mamirauá staff. This community organization effort has been aimed at both men and women. Many of the elected representatives of communities and sectors are women who are seen as naturally well suited for organizational duties.

Using the vernacular of the community-based conservation literature, the Mamirauá Institute's Quality of Life program would be considered the project's community development effort. This program includes a wide variety of activities aimed to improve everyday living within the Reserve communities. Programs include health, environmental education, science education, communication, and alternative technologies. These programs are aimed at both men and women, though health programming tends to be focused more on women and children. Women are

considered to have responsibility for the family's health, especially the health of the children, so these programs tend to have a higher female participation. Environmental education programming is aimed more at children, though the program depends on the volunteer leadership of a community adult, who may be male or female. The other programs tend to be aimed more equally at both men and women.

Economic Alternative Programs

There have been a number of economic programs introduced into the Reserve including artistry, managed fishing, sustainable family farming, managed forestry, and ecotourism. Each of these programs offers many opportunities to local people and impacts their lives in intended and unintended ways.

Artistry

The people who populate the Mamirauá Reserve today, known locally as *coboclos* or *riberinhos*, are descendents of indigenous people and settlers who migrated from the northeast of Brazil, particularly during the rubber boom of the early twentieth century. The northeasterners were the descendents of indigenous people, Africans who were brought to Brazil during the slave trade, and Portuguese settlers. These groups passed down the traditions of making various artifacts used in domestic chores and agricultural labor such as pots, baskets, hats, brooms, woven mats, and other items. Over time, some of these utilitarian items also came to serve as decorative pieces or souvenirs for visitors. But this traditional knowledge was slowly being lost as younger generations searched out new means of livelihood and entered the cash economy. The Mamirauá Institute Artistry Program developed in response to this social change and to the need for alternative sources of income, particularly for women. The Artistry Program began in 1998 in the Mamirauá and Palmital sectors. The groups of women

in these sectors initially organized themselves with the objective to rescue traditional knowledge by passing on to younger generations the artisanal skills necessary to produce a variety of domestic tools and utensils used for agricultural production and everyday living. These women organized themselves at a time when a growing number of tourists were visiting the region as part of the ecotourism program, another one of the Mamirauá Institute's economic alternative programs. The tourists desired to bring home souvenirs and provided a market for sale. The convergence of these two developments provided the impetus and amenable circumstances for the Artistry program to take off. The goals of the artisan program then included the rescue of local knowledge that was being lost and the generation of income for families.

This program has historically targeted women with the explicit goal of providing a source of income for women who could work from home while still caring for their children and fulfilling other domestic responsibilities. There are a few men who participate in the artisan program. They are almost exclusively involved in woodcarving, usually making small renditions of animals found in the forest.

The Mamirauá sector has two groups of artisans, each with its own store where they can sell their products to tourists. As part of the ecotour program, the tourists visit one of the nearby villages. The village of Peixe-Boi do Mamirauá has an advantage as its store is located at the entrance to the Reserve, so it is easiest for tourists to stop in at this store. However, there is an organized effort to alternate visits among a handful of participating villages. Artisans from the villages that do not have one of the two stores will either lay out their wares on a table for the tourists to view or they might bring their products to one of the nearby villages with an artisan shop to sell their products there.

The crafts produced in the Mamirauá sector are mostly seed jewelry, woodcarvings, baskets, or other products made of woven vine materials. The bracelets,

earrings, necklaces, and belts made of seeds are produced exclusively by women. There are also two groups of artisans in the Palmital sector. One group is composed of primarily women involved in pottery. They are able to sell some of their pots to tourists by shipping them to market, but they also produce utilitarian earthenware for domestic use, which is purchased by local people. The other group in Palmital is mostly women from the village of Novo Colombia who produce wood carvings, both decorative and utilitarian. This group is currently very active and is achieving a good deal of success with marketing their products. Because the groups in the Palmital sector are located outside the area visited by ecotourists, they have had to find other methods to market their products. Many of these products are purchased locally for domestic use. The Mamirauá Institute also assists in marketing these products at periodic fairs and through a series of gift shops they have opened in Tefé, Manaus, and elsewhere.

Ecotourism Program

The ecotourism program in Mamirauá dates back to 1998. The program has been receiving guests at the Pousada Uacari, or ecolodge, since 2001, when the infrastructure was completed. The broad goals of the program are to promote conservation of the natural resources and to improve the quality of life of local people. More specifically, the program aspires to generate income for local communities and individuals, strengthen community organization and capacity-building, and create incentives for the communities to promote conservation (IDSMS 2008).¹⁴ Though this program is a significant source of income for both the individuals employed by it and the communities who reap a share of the annual profits, the intention of the program

¹⁴ <http://www.Mamiraua.org.br> (accessed September 24, 2008).

was not to replace traditional forms of labor in the area but to augment incomes.

Though the intention was not to impact traditional economic activities like agriculture and fishing, my interviews and field observations showed that younger generations are highly interested in working for the ecotour program and are becoming less interested in continuing the work that supported their parents' generation. This is one of the problematic impacts of this program which will be discussed in Chapter 7.

The program has been very successful, having won various ecotourism awards including a prize for Best Ecotour Destination from Condé Nast Traveler and a Sustainable Tourism award from Smithsonian in 2003. The program includes hikes and boat rides in the flooded forest and nearby waterways to observe wildlife; a tour of one of the seven communities involved in the program where tourists can meet local people, see how they live, and purchase souvenirs (provided through the artistry program); a visit to one of the research stations and usually a lecture and possibly a guided tour by a scientist working in the Reserve; and leisure time at the Uakari lodge, which is a series of floating buildings connected by floating boardwalks.

The program has 54 local people who participate as paid workers. Their jobs include the several managerial positions for the Uakari lodge, nature guides, cooks, waiters, housekeepers, and maintenance men. These workers are all members of an organized association that functions as a labor union. They have an elected president and hold meetings regularly where they discuss work-related issues and participate in decisions pertaining to the operation of the ecotour program. Other local people engage with and benefit from the ecotour program by either selling their agricultural produce to the Uakari lodge or selling artisanal products to the tourists as part of the artisan program. There is no explicit mention of gender in the stated objectives; however, the program includes participation from both men and women. Benefits can be identified for both genders as well. The jobs at the ecolodge are generally divided

along traditional gender lines: there is a male administrator who oversees guiding, maintenance, and operations, while a female oversees the housekeeping and food service. The local nature guides who are charged with paddling or driving boats and guiding guests on hikes are generally male, though there are two exceptions (both women who I included in the female leader category discussed at length in Chapter 5). Cooks are both male and female, while housekeepers and wait staff are exclusively female. The ecotour endeavor was one that easily included both male and female Reserve residents without requiring any shifts in gender norms, so both men and women participate and benefit.

The ecotour program is centered in the Mamirauá Sector, where it has had its biggest impact. It has had an important impact on the lives of local people and the degree of success in conserving natural resources in the immediate area. Local men and women in the immediate area now have an additional source of income, or at least the possibility of obtaining this work. It is important to emphasize the limited reach of this program since it is only feasible for people who live within a reasonable travel distance to work at the ecolodge. The ecotour area is relatively small in relation to the entire Mamirauá Reserve. Only seven communities benefit directly from employment opportunities and the annual share of earnings from the ecolodge. However, the program has a wider impact through the compliance to regulations that it is able to exact from these seven communities, whose inhabitants come in contact with a wider group of Reserve residents. One significant aspect of the program is that in order for the community to participate in employment opportunities or to receive a share of the annual income from the ecolodge, the community must comply with a series of conservation-oriented regulations. These regulations are self-imposed by the union of ecotour workers, but the idea was introduced through outside agencies such as the Mamirauá Institute. If an individual, and therefore, that individual's community, is

caught breaking a rule such as fishing out of season or fishing in a protected lake, they will be docked a certain number of points. At the end of the year, the group will decide how to divide the share of proceeds based on the number of points each community has. The more compliant communities will have more points and theoretically are entitled to more benefits. This point system which determines community-level rewards appears to be quite effective in encouraging conservation behavior.

Communities are motivated to earn these funds, as they have allowed purchases of boats, motors, construction materials for community centers, and other significantly large improvements. In such small, tight-knit communities, individuals are highly pressured to comply with these norms so as not to lose their individual opportunity to work at the ecolodge and also to avoid causing the entire community to lose out on the annual reward.

Agriculture Program

The sustainable agriculture program started in 1994 in three communities within the Reserve. It now works in 25. The objectives of the program include promoting new techniques as well as conserving traditional agricultural techniques that increase production; conserving the agricultural diversity; promoting new cultivars and economic alternatives that incentivize the farmer to reduce the need to deforest; incentivizing families to conserve germplasm; improving the diet and income of farm families through capacity-building and education programs; promoting the permanence of the *coboclo* in the Reserve; and decreasing the rural exodus. The three main types of activities of the program are research, extension, and management of the forest and enrichment of fields. Research activities focus on testing different types of varieties to identify those that can withstand insects, disease, and environmental stress as well as measuring impacts of vegetation and sedimentation succession stages.

Extension efforts include organizing farmers, promoting adoption of techniques that improve yields, introducing cultivars that produce rapidly, promoting meetings between farmers and innovating farmers, assisting with commercialization, and introducing new types of agricultural activities to increase incomes. Management of the forest and enrichment of fields involves selecting species of trees that produce wood, fruit, and medicine that survive flooding and managing the forest for multiple purposes.

The target population of the agricultural program is the family unit, since all members of the family participate in agricultural activities. This program, like the ecotour program, works with both men and women. Children are also included. As one reads the program literature, it can be observed that the language includes some male reference that really is intended to refer to both men and women but there is also reference to female farmers and to families in general. For example, when listing the program's objectives, there is reference to the rural man, when referring to all rural people—men, women, and children—but there is also repeated inclusion of terms such as *agricultores e agricultoras*, which explicitly refers to male farmers and female farmers. There is no explicit reference to goals of gender equality in the program's objectives; however, there is a fairly equal balance of participation between the genders, and the objectives and projects are aimed at the entire family. Since agriculture is integral to economic and family life, this program not only assists both male and female farmers, but most importantly it assists them together. Some projects may target one gender, such as the women of Porta Braga who built a garden; however, much of the program's work involves both men and women working together. Though affecting gender relations is not an explicit goal, the involvement of men and women working together on these projects provides the opportunity for this. The program also affects both men and women's relationship to nature through its

emphasis on promoting change (e.g., change in cultivars, techniques, economic activities) but also through its support for the persistence of traditional agricultural labor. In this way it supports the continuance of an intimate tie to the land for both genders.

Commercialization of Fish Program

This program began in 1998 in the Palmital Sector amidst considerable conflict. In response to declining fish populations, in 1996 IBAMA outlawed the fishing of pirarucu, the largest and economically most valuable fish in the region. However, because Amazonas is such a huge region filled with so many waterways and IBAMA had insufficient resources to enforce the law, the fishing continued illegally. IDSM conducted a study and determined that it would not be viable for Reserve residents to survive as fisherman if they were prohibited from fishing for pirarucu. As a result, a proposal was submitted to IBAMA that would entail legalizing the catch of pirarucu inside the Mamirauá Reserve within a strictly managed program. This involved rotating the lakes in which fishing was conducted among 31 of the 133 lakes that exist in the Palmital sector. IBAMA approved the proposal and the first managed fishing of pirarucu took place in 1999. In this year, there were 42 fisherman involved who exploited seven different species of fish including pirarucu. The program was highly successful that first year, with the number of pirarucu in the sector increasing 64% (www.Mamiraua.org.br, accessed September 24, 2008).

Generally, the goals of this program are to assist fishermen inside the Reserve with commercializing their catch, improving their income, while monitoring and managing fish populations sustainably. The program aims to improve sanitation and quality controls by implementing a system for processing and transporting catches. Through organizing fishermen into a cooperative and offering education programs,

adherence to the resource use restrictions is promoted. Local fishermen are aware that their ability to fish legally, as well as the technical assistance they receive from the Mamirauá Institute, is dependent upon their compliance.

This program targets men but does not explicitly exclude women. Though it is men who exclusively fish for pirarucu, their spouses will attend meetings at times and are often responsible for maintenance of fishing equipment such as nets. Women may participate in the cooperative without fishing and will therefore receive a share of the profits. Interestingly, the president of the fishermen's cooperative in Palmital is a woman, while all the fishermen are male. This woman is one of the women I categorize as a leader and will be discussed in detail in a later chapter on that subject. This program is significant for both men and women, as fishing is the most important economic activity in the Reserve. Through the assistance of this program, local fishermen are able to continue pursuing their traditional livelihoods legally and in a manner that does not endanger the local fish populations. As local people have observed the return of healthy fish populations, particularly the pirarucu that had been extremely compromised in past decades, they have become advocates for managed fishing policies. They take ownership in protecting their lakes from illegal fishermen, whether they are from nearby villages or are commercial fishermen from outside the Reserve. Stories abound of nighttime confrontations between Reserve villagers and invaders. These confrontations will draw both local men and women from their homes in the middle of the night to protect their resources from these illegal fishermen. Though this program targets the traditional male fishermen, it has significant effects for both genders.

Community Forestry Management

The beginning of the forestry program in Mamirauá dates back to 1993, when a biological inventory of species was conducted as well as a socio-economic study that identified the local foresters and buyers as well as the system of sale. This program took shape in an environment where there had been a prohibition on commercialized forestry without a management plan since 1965. In 1998, however, the government passed a decree that simplified the requirements to establish community-managed forestry.

Extension work was already underway in 1996 within the Reserve with the objective to strengthen relations with local resource users, understand their doubts and difficulties, and incent an organized form of forestry management.

The activities of the program generally include organizing local users into a legal association, providing training and technical assistance, and promoting participation of local users in planning, execution, and monitoring of forest management. Assistance with commercialization of timber is provided as well as use of technical equipment.

This program, like the fishing program, has helped to reduce illegal resource use and has increased community organization. Forestry is an important economic activity in the region, particularly during the flood season, when fishing and agriculture are interrupted. The program targets primarily men, though there are a few active women as well. In the village of Peixe-Boi, there were six people in the forestry association at the time I collected my data, two of whom were female. One of these women was also the president of the association. But this is primarily a male-dominated activity, so it follows that programming is aimed at men. Women are not excluded from activities, but there is no explicit goal of including them in programming, so they are generally impacted only indirectly, through their husbands.

Research Plan

After the initial exploratory visit to Mamirauá in 2004, my fieldwork began in earnest in November 2005 and continued through December 2006. However, this period was punctuated with a number of return visits to the United States, leaving a total of 9 months spent at Mamirauá.

I began in Tefé, working with the Mamirauá staff people before heading out to my first village in the Reserve. My main goals for this period were to learn about the history and management plan of the Reserve, and the structure of the conservation program that the Institute is implementing, and to identify a village inside the Reserve in which to focus my fieldwork. In Tefé, I was able to arrange a meeting with my three closest contacts at IDSM: the coordinator of alternative economic activities and community organization, the coordinator of the artisan program, and the coordinator of the ecotour program. We discussed the types of villages I was seeking for my study, one with the longest history of involvement with the conservation program. I then made an initial visit into the Reserve on the Institute's supply boat. This gave me the opportunity to make a loop around the focal zone of the Reserve and to visit a number of villages. In consultation with the IDSM staff, I eventually settled on Peixe-Boi do Mamirauá as the village to be the focus of my fieldwork.

Why Peixe-Boi?

Though Peixe-Boi is a small community, its size is not unusual for the region, and it has other qualities that make it appropriate. Peixe-Boi was an appropriate choice because it was one of the first communities to have contact with the Mamirauá Institute when Márcio Ayres visited communities to discuss the idea of a reserve. Peixe-Boi has been actively involved in various programs throughout the Reserve's 15-year existence. Peixe-Boi also offered several logistical advantages. First, it is

located at the edge of the Reserve closest to Tefé. It would generally take about an hour by boat to reach Peixe-Boi from Tefé if one had a 45hp motor. With a 15hp or a particularly heavily loaded boat, it could take as much as three hours. This makes it the most easily accessible community within the Reserve. Located at the confluence of the two rivers that create the boundaries of the Reserve, it is also necessary for all transport into the Reserve to come close, if not pass directly by, making it a frequent stop for Institute staff while out in the field, even if they are not conducting work specifically in Peixe-Boi. I felt that this consistent traffic would likely have an effect on the residents of Peixe-Boi. People in Peixe-Boi have a higher frequency of interaction with outsiders simply due to location. This opens the possibilities for increased knowledge of outside activities, greater ability to exchange news and ideas with people passing through, and might also lead to increased opportunities for employment (e.g., as field hands for Institute researchers), attending trainings, or acquisition of other resources from outside sources. Another logistical advantage as a research site that Peixe-Boi offered was a research station in which I was able to live during my time in the village.

Description of Peixe-Boi

The village of Peixe-Boi comprises 13 homes housing approximately 29 adults and 22 children. An exact count is difficult due to the transience of community members. Many people spend weeks or months away in other towns, such as Tefé or Alvaraes, but still consider themselves residents of Peixe-Boi. Others move to the towns for longer periods but might return at some point. One could use the official list of village associates, i.e., members of the community. However, that list does not necessarily reflect who is present in the community day to day. I counted the people that I saw living in the community consistently during the period I was present. In addition to the

local residents' homes, one of the buildings houses a school teacher, who generally comes from one of the neighboring urban centers and lives in the village for 5 days a week while school is in session.

Like most villages in the *várzea*, Peixe-Boi is constructed along one side of the river's edge on the highest land. Starting downstream, there are four houses lined up in a row, another floating house below these, and a floating kitchen building (in the river). These five homes house one of the two families in the village. This family is related to the other family through a son from one family marrying a daughter from the other. As you proceed upstream, there is a soccer field on the high ground, the floating research station, another floating home, and the artisan's store all floating in the river. Upstream of the soccer field, there are seven more homes, the school, the community center, a screened-in building constructed by a Mamirauá researcher for housing bromeliads, 2 floating kitchens, the water tower, and the small structure that houses the community generator.

The village also has a number of small home gardens constructed alongside some of the homes (or floating in the river); a larger, community garden; and a school garden. There are generally cows, chickens, ducks, pigs, and dogs wandering throughout the community. Located at the confluence of the Japurá River, Solimões Rivers, and the Cano do Mamirauá, a smaller waterway leading into the center of the focal zone and up to the ecolodge, Peixe-Boi is a central stop-over for many travelers. People from the two other villages nearby often stop by Peixe-Boi to either visit family or attend meetings. There is a consistent flow of Mamirauá staff and tourists on their way to the Mamirauá ecolodge who pass by as well. So, though Peixe-Boi is a small community, it is also a hub with frequent visitors and a good deal of activity. It is a community that lies physically in the path of many of the changes and interventions that have been brought to the area by the establishment of a reserve.

Peixe-Boi residents have been interacting with Mamirauá staff and participating in programs from the inception of the Reserve.

Individual Interviews

As mentioned above, I relied most heavily on interviewing for my method of data collection. I conducted interviews with several different types of participants, so my interview varied according to my particular emphasis at the time, but all of my interviews touched on my objectives of understanding the management strategy of the Reserve, understanding gendered resource use, documenting gender relations in Reserve communities, and assessing impacts of the conservation project. I conducted in-depth, semi-structured interviews with 70 individuals between November 24, 2005 and November 28, 2006 in 15 villages¹⁵ and towns in and around the Reserve as well as several in Manaus. Some of these participants were interviewed more than once, making a total of 86 recordings. Though I had pre-established topics and theoretically driven questions before developing my interview schedules, the questions asked in these interviews were informed by numerous informal conversations with Mamirauá staff members and Reserve residents. The interview questions also evolved as I progressed through the process of conducting formal interviews but generally fell within the categories of my four empirical objectives. Each interview included questions regarding the management strategy of the Reserve; local resource use by men and women; gender relations including the division of labor, decision-making in the home, and political participation; impacts of the conservation program focusing on resource restrictions, community development, and economic alternatives; and

¹⁵ To protect the identity of individual participants, I have opted not to include the names of the villages, but they were dispersed around the circumference of the Focal Zone and surrounding towns. The communities in the Reserve are so small that if the exact location of interviews were made public, it might be possible to identify individuals from the references included in this study.

transformations in environmental behaviors. These interviews were divided among various types of informants including Mamirauá staff members, Reserve residents, and other people involved in management of the Reserve who sit on the Deliberative Council. Within these three main groups, I created sub-groups. For example, the group *Reserve residents* could be divided into participants from different villages, men and women, women leaders, and residents who sit on the Deliberative Council. Though all interviews contained the common themes mentioned above, the emphasis of each interview depended on the group to which the participant belonged. Reserve residents focused more on the division of labor, natural resource use, and their sentiments toward the Reserve, whereas NGO staff and people from other agencies focused more on the goals and results of conservation programs. Interviews ranged in length from 16 minutes (with one repeat interview that was cut short by rain) to 3 hours and 18 minutes with one of my key informants. Generally, an interview lasted about 1.5 hours. I also kept Field Note sheets on each interview. I created a template for the Field Note sheet that contained blanks to be filled in after each of the major topics to be covered in the interview. I filled these Field Note sheets in as soon as possible after each interview, noting the date and location of the interview, highlights of each interview, and the critical individual information for the informant. Many interviews in Peixe-Boi were conducted without an assistant present, since I became a known presence in the community. I had been publicly introduced to the community, and people in this village are very accustomed to speaking with outsiders associated with the Reserve, so they spoke to me willingly. In contrast, most interviews in other villages included the presence of Ana, the assistant from Peixe-Boi that I hired to help with many aspects of this study. She was invaluable in gaining entrée to villages where I was not yet known.

Sampling

I chose participants using a purposive, snowball sampling technique. This allows the researcher to access information-rich informants who have special knowledge or experiences pertinent to the research question (Patton 1990). I began with informal interviews with a number of key Mamirauá staff members. I first spoke with the Director of Economic Alternatives, who also supervises the areas of regulation enforcement, quality of life, and community political organization. Given her position overseeing the areas of community development, economic alternatives, and regulation enforcement, she had a great deal of knowledge about the aspects of the Institute's work that interested me the most. I also spoke regularly with the coordinators of the artistry program and the ecotour program, as they had been assigned by the Institute's administration to act as my direct contacts, and also each worked with a population of women who were involved in the Institute's programs. I also had discussions with Deborah de Magalhaes Lima-Ayres, one of the original founders of the Reserve, the Institute's Scientific Technical Director, the Sub-Coordinator of Enforcement, and the Coordinator of Research, all of whom have been working in the Reserve since the 1990s or earlier and could offer a historical perspective as well as a wealth of knowledge about the Institute's programs, the communities, the management plan for the Reserve, the local geography, the system of transport, and much more. These initial informal interviews with key informants, which were essentially conversations, provided me with a great deal of background information. They also allowed me to develop a list of other informants from the Institute, from other agencies, and from the Reserve that I would later want to interview. My target sample size would be determined by reaching saturation, the point at which the responses I received in interviews began to repeat and no new information of significance was gained by continuing to interview.

The intent of qualitative research is not to generalize from a sample to a larger universe but to identify patterns that can be conceptually transferred to similar contexts. This is appropriate when studying a management strategy in one protected area that may be later applied to others. In this case, the intent is not to assert that Mamirauá, its residents, and its problems are representative of other protected areas but to learn lessons from a conservation program which within the international conservation community is viewed as a model of success. Mamirauá is not representative. It is unique because so few protected areas have succeeded in implementing the theoretical concepts upon which they were designed. Because Mamirauá is unique in this way it has much to teach us. It is the embodiment of a theoretical concept which allows us to study the benefits, limitations, and challenges of this vision of a protected area. Given the dearth of truly active, community-based, protected-area management exemplars in Latin America, transferability is a more appropriate and more realistic objective than generalizability for this research question. By understanding the ways in which residents of the Mamirauá Reserve are affected by these programs, programs in other similar contexts can better maximize benefits and minimize costs to the residents in these other locations.

The groups from the Reserve were generally illiterate or ill-at-ease with written documents, so, instead, at the beginning of each interview I opted to ask for verbal permission to record interviews. Both Mamirauá staff members and the other Reserve managers on the Deliberative Council were asked to sign a written permission form to be interviewed, since these individuals were not daunted by such formalities.

Reserve Residents

There were four categories of Reserve residents that I interviewed individually: those who lived in Peixe-Boi, those who lived in other villages, women leaders (this group

is a sub-set of the first two groups), and members of the Reserve Deliberative Council (this included both men and women and has overlap with the first three categories).

Peixe-Boi Residents

The first set of formal interviews was conducted in Peixe-Boi do Mamirauá with the majority of the village's residents. Nineteen individuals were interviewed, leaving only 10 adults in the community that I did not interview formally. Of the 19 individuals, 10 were women and 9 were men. I then obtained an additional 11 recordings by interviewing some of these again. This made a total of 30 recordings with 19 respondents.

Interviews were conducted either in the home of the informant or at the research base in the village. I began by going to the informant's house but often found the environment extremely noisy due to children or domestic livestock. I also found it challenging at times to limit my interview to only the targeted household member if others were present. Spouses would at times chime in from the other room and then rejoin the conversation when something in the conversation piqued their interest. In order to reduce noise and to single out the informant, I began to ask them to join me at the research base. This was not an issue in Peixe-Boi since the research base is viewed basically as communal space. I found the people from Peixe-Boi to be very comfortable visiting the base, as they were used to doing so for various other reasons as well. Some questions on my basic interview schedules remained the same or were only altered to increase clarity, while others were added or deleted depending on what I was learning along the way. In Peixe-Boi, my interest was in getting a general idea of what life is like for people. The main themes of interest were natural resource use; division of labor in the home; participation in Institute programs (both paid work and unpaid activities); political representation and personal participation in political

activities; gender relations regarding labor in the home and community, resource use, leisure activities, and political activity; and general questions regarding the Reserve including history, feelings of support or disagreement with regulations, benefits and costs of Reserve programs; and personal, demographic information. These interviews remained fairly consistent in the themes that were covered, though I altered wording as I went to improve clarity.

Other Villages

The people I chose to interview in other communities were generally chosen to illuminate a particular area of interest such as women leaders or members of the Deliberative Council or specific productive groups. In these cases, I was often seeking out an individual about whom I had heard through previous interviews. For example, I sought out particular women reputed throughout the Reserve to be strong leaders. I had also heard of a women's co-op that had failed and had been part of the Artistry Program. I became interested in why this particular group failed while others were successfully producing and selling their crafts, so I sought out various members of the group that had disbanded to inquire about the reasons. These interviews often contained some of the same themes of the Peixe-Boi interviews but were more tailored to the circumstances that had captured my interest in that individual. This group included women leaders, Deliberative Council members, women participating in both successful and failed artisan groups, and other public leaders.

There were 26 individuals interviewed in villages other than Peixe-Boi, covering nine different villages spread throughout the focal zone of the Reserve. Nineteen of these people were women and 7 were men. I followed up with a second, in-depth interview with four of these individuals, which made a total of 30 recordings

from villages other than Peixe-Boi. These interviews were conducted either in the informant's home or at the ecolodge.

Women Leaders

Another group I chose to interview I came to think of as women leaders. I defined *leadership* as filling a formal position with responsibility for directing an organized group or a specific aspect of a group's activities. Several of the women who were from Peixe-Boi were easy for me to identify once I was staying in their community, as their activities and behaviors in the community caused them to stand out in comparison to other women. For example, they were very outspoken at public meetings and held positions such as President or Secretary of the community. Women leaders from other communities were selected by snowball method based on their reputation. I simply asked residents of Peixe-Boi as well as Mamirauá Institute Staff for names and villages of women who were known to be particularly active in the political organization of the Reserve.

All the women leaders participated in either an in-depth individual interview or an oral life history interview or both. Some also participated in a focus group in addition. I began by conducting the individual interview with these women. With those who especially stood out as leaders, I later scheduled an oral life history interview. Oral life history (Anderson and Jack 1991) is a tool used by feminist researchers to understand the roots and long-term trends of current issues. This open-ended technique was used to delve into participants' memory and document their progression through their life stages. For this particular study, these histories focused on the entry into public roles and the development of skills necessary to fill these roles. The histories also revealed changes in men's and women's roles and power relations over time.

Though examining norms and power relations was a focus of my study from the inception, the specific focus on women as leaders in public roles developed during the field experience. As I spent more time in the region, I began to hear about particular women who stood out and had taken on a number of leadership responsibilities. In total, there were 15 women who I considered to be in this group. I became interested in how these women came to take on these traditionally male roles, why they chose to dedicate so much time to what were generally voluntary positions, as well as what they gave up and what they gained from doing so. This group of women is a sub-group of the previous two mentioned. All of these women came from within the Reserve, either from Peixe-Boi or another village. There were four women in Peixe-Boi who are active in both community and Reserve politics. Each of these women I had the chance to interview several times and have multiple informal conversations with over the period in which I stayed in their village. I also had the opportunity to observe them in various community functions and meetings. There were 11 women from other communities that had taken on some sort of leadership capacity. The degree of responsibility, number of positions they each had, and capacity to effectively execute their duties varied significantly. One woman had been appointed to the position of president of the (mostly female) artisan's group and because of that position was also appointed as a representative on the Deliberative Council; however, her knowledge regarding administration of the Reserve was extremely limited. Still, I considered it interesting to learn that despite her limited ability to discuss management of the Reserve and to speak out in public, she was still appointed to these leadership positions. Two of the other women had a reputation throughout the Reserve as outspoken leaders. I traveled to their villages specifically to interview these two women and also had the opportunity to do a follow-up interview later in Tefé with each of them. These women, along with one from Peixe-Boi, were

truly remarkable in their ability to take control of a room of people and conduct business. They are seen traveling throughout the Reserve, attending meetings, and participating in Reserve business in various capacities. They give up significant amounts of their time voluntarily for the benefit of their communities and the Reserve. Other women had established themselves as capable leaders in one particular role. They showed great leadership in their chosen role but generally stayed closer to home and had fewer roles to balance. These interviews were conducted either in the women's homes, at the Mamirauá Institute, or at my apartment in Tefé in the case of repeat informants whom I had gotten to know fairly well.

Conselho Deliberativo Representatives

This group became one of interest after I had been in the region for some time and became aware of the shift in decision-making authority within the Reserve. Previously, Reserve residents were able to voice their opinions and make decisions about Reserve matters in an annual general assembly where each sector would have two voting representatives. My fieldwork was taking place during the first year of a new system where a deliberative council had been created to replace the General Assembly as the ultimate authoritative body. As a sustainable development reserve, Mamirauá was required by the state of Amazonas to construct a deliberative council that would include Reserve residents, government agencies, and non-governmental organizations to make management decisions. I became interested in understanding both to what extent residents had decision-making power and how men's and women's ability to voice their opinions and make change might differ as representatives on this council. The council is still very young, and its members are in the phase of developing protocols. I began to search out both male and female members of the council and tried to talk with both Reserve resident representatives as

well as representatives from government and non-governmental organizations. I interviewed 10 Reserve residents (7 women, 3 men), 2 governmental representatives (IPAAM, IBAMA), and 6 non-governmental representatives (including 2 from the Mamirauá Institute). My questions in these interviews revolved around power to voice opinions, how decision-making is conducted within the group, how the group members were determined, the informant's depth of understanding of their own role, how they came to be elected for that role, how they view the current role of the General Assembly, and how well they thought the new system of having a deliberative council functions. In the case of the informants who were Reserve residents, these interviews were conducted either in the informant's home or in some cases after a meeting in a community center. With the Council members who were from various agencies, the interviews took place either at their offices in Tefé or Manaus, or at some public location such as a café or the university in Tefé.

Mamirauá Staff Members

I conducted 22 interviews with Mamirauá staff members. Most of these interviews were conducted either at the Institute or in my apartment in Tefé. Several were conducted at the home of the informant.

With this group, I targeted key administrators such as those mentioned earlier under the discussion of sampling technique. Administrators such as the Director of Economic Alternatives, Technical-Scientific Coordinator, and Coordinator of Research could provide an overview of the Institute's programs and goals as well as a historical perspective. I also targeted coordinators of specific programs that worked with primarily male, primarily female, and both male and female Reserve residents. Interviews with program coordinators focused on the history of the program, its goals, its current activities and participants, impacts of the program, and observations

regarding gender relations of participants. These interviews were also often a good source of reference material, as staff would refer me to previous studies conducted and other documentation available in the Mamirauá Institute library.

Focus Groups

I explored gender-specific norms and gendered power relations using Gender Analysis focus groups adapted from Kindon's (1993) Gender Myths focus group. I conducted three focus groups: one with women in Peixe-Boi, one with men in Peixe-Boi, and one with women in Floresta, a village on the far edge of the focal zone. I attempted to also conduct a focus group with men in Floresta but though they said they would meet with me, none of them showed up on two occasions.¹⁶ The procedures used for this activity are discussed in greater detail below.

The Gender Myths focus group is designed to make explicit cultural beliefs regarding gender differences. Gender stereotypes can enforce gender roles and unequal relations between men and women. They can create gendered exclusion from certain activities or keep certain groups from access to resources, information, and decision-making power. Raising awareness regarding gender myths can potentially defuse some of their power. In this activity male and female community members are separately asked to discuss cultural perceptions about men and women through answering open-ended questions and possibly telling stories or proverbs or singing songs. The facilitator may offer some stereotypical gender myths followed by directed question to encourage discussion.

This activity was used as a model to initiate a group conversation of focus group participants (with men and women separately) regarding gender norms and

¹⁶ I was able to secure an individual interview with the president of the community, who is male.

power relations between men and women in the community. I asked questions about the gender division of labor, men and women's natural resource use, opinions about natural resource use restrictions within the Reserve, men and women's roles in the community, participation in political and economic activities, as well as participation in other Reserve-related programs. I also asked questions about what people thought makes a respectable man and woman, husband and wife, mother and father. I adapted the discussion topics to reflect the focus of my research question and the local environment. Some of the specific discussion questions included¹⁷ the following:

- What should a respectable man/woman *be* like?
- What activities are men and women expected to do?
- Which activities should be avoided by respectable men and women?
- Have these changed over time?
- What makes a good husband/wife?
- What are women and men most valued for?
- Who make better leaders?
- Who is more active in groups?
- Who is more active in natural resource management decisions?
- What roles do women and men play in village development?
- Who has more leisure time?
- Who is more intelligent?
- What are the strengths and weaknesses of men and women?
- What problems do men and women face today?

I originally planned to conduct more focus groups than I did, but these proved very difficult to organize given Reserve residents' busy and erratic schedules. People

¹⁷ See Appendix A for the complete Gender Analysis Focus Group interview schedule.

were frequently either away from the village for the day to fish and to tend to farm fields or traveling to town to visit relatives, stock up on supplies, or conduct business with local authorities. Early in my stay, I conducted 2 focus groups in Peixe-Boi. These were done with groups of men and women separately. With focus groups, it is important to have small, purposefully chosen, homogeneous groups so that you can isolate the perspective or experience of that particular group. Ideally, you would have groups of six to eight participants (Krueger & Casey, 2000). My group of women in Peixe-Boi had seven adult women (plus me). These women ranged in age from 18 to 65. The youngest women had two small children with her. Two of these women have attained the fifth level of formal primary education, while the educational attainment of the others was less. Three of these women continue to study part time. All of the women are mothers. The one single woman in the group has only one child, while the oldest woman in the group has 12 children. These women are all related by either blood or marriage. Four of them hold leadership positions in the community or conservation-related programs. All of them participate in Reserve programs, particularly ecotourism and artistry. All participants stayed for the entire focus group, and most were highly engaged. The focus group lasted 80 minutes.

The male group had a varying number of participants, as some men came, while others left, during the activity. There were seven men who stayed throughout the entire activity (plus Ana and me). They ranged in age between 18 and 68. These men are the spouses, sons, or fathers of the women who participated in the women's focus group, so correspondingly, familial ties were also strong within this group. The two youngest men, ages 18 and 19, are single with no children and still studying. Four of these men hold or have held leadership positions within the community. Most of them are involved in Reserve programs through ecotourism, forestry, enforcement, or artistry, or as field hands. This focus group lasted 50 minutes.

I had hired Ana, a local woman from Peixe-Boi, as a field assistant. She was an important link between the locals and me. As she was related to most people in Peixe-Boi, she was able to convince people to participate quite easily. Aside from segregating the groups by sex, I placed very few stipulations on who might join the focus groups. I indicated to Ana that anyone who was an adult resident of Peixe-Boi could participate and asked her to locate 6 to 8 people for each group. I didn't place any further restrictions on the characteristics of participants, as my objective was to understand what the relations between men and women were like in that community. All adult members of the community were welcome to participate.

Later, I conducted a third focus group with women in Floresta, a village at the most remote end of the focal zone. Again, Ana acted as the bridge to the local community. Though this village was distant from her own, her presence as my assistant won me the cooperation of Julia, the local female leader I had come to interview. Julia was then critical in rounding up other women in the community to come talk with me. Again, I segregated the groups by sex and made the invitation open to any adult from that community. Nine women attended in addition to Ana and me. These women ranged in age between 17 and 45 years. Many of them had children with them or who wandered in and out during the group. Julia had the highest level of education, having attained the fifth level of primary education.

I made two attempts to gather the men in that village for a similar session, but on both occasions, none of the men came to the community center as planned. As I spent only a few days in this village, I wasn't able to determine the cause of the men's reluctance to talk with me or why some of them agreed to come but then did not show up on two occasions. I suspect that they agreed to come to be polite but did not really see any value in investing their time. Many researchers and extension workers visit villages in the Mamirauá Reserve in search of information, resulting in a saturation

effect. Locals have seen many researchers come and go over the years, often without identifiable results. If the local people do not see a direct benefit, they have become reluctant to invest too much time. In my individual interviews, men seemed to be more willing to express this loss of interest than women. Men would comment on how meetings were a big waste of time and that all that would happen is a lot of talking and no action. Meanwhile, they needed to fish or work in some other fashion to feed their families. In this regard, women seemed to have more freedom to attend meetings, as they could bring their children along. So women were able to both fulfill their domestic duties and participate in meetings, while men were not, since their work required them to leave the village. Another possibility is the effect of the researcher's characteristics on the willingness of the participants. The men may have been more uncomfortable with the idea of meeting with me, a foreigner and female researcher, than if I had been a male or, better yet, a male Brazilian researcher.

The women in both communities seemed very willing to talk about their thoughts and feelings, while the men in Peixe-Boi gave me the impression that they were present out of obligation. I suspected that the men in Peixe-Boi agreed to participate either because their wives had cajoled them sufficiently or possibly due to a paternalistic relationship that has developed with the Mamirauá Institute where Reserve residents have learned that through participating in Institute activities, they may directly or indirectly benefit. Though I specified that I was not an Institute employee, I was clearly associated with the Institute since I arrived in the Reserve with an Institute motor boat and had privileges to utilize Institute research bases. The men in Peixe-Boi seemed willing to oblige me in conducting the focus group and were in good spirits but did not take it very seriously. There was a good deal of joking around among them, and they generally seemed to view it as a recreational activity, possibly a time to socialize. As they made light of many of the questions, I wondered

if the questions really made sense to them, if the men were uncomfortable discussing these issues with a woman or an outsider, or whether they just did not consider them important issues. They responded more tersely and tended to answer me directly opposed to conversing among themselves.

The women, on the other hand, seemed to be aware of the impacts that gender relations have in their lives, so they were more serious and thoughtful about the subject. The women in Floresta, who are very isolated, started out quiet, but the session became an outpouring of difficulties dealing with life in the Reserve. They spoke of how their isolation results in a lack of education, access to markets, basic necessities, and amenities. They talked about the lack of freedom to travel outside of the village, the lack of opportunity for anything other than marrying young and bearing children without access to family planning, and difficulties with domestic violence. The purpose of conducting a group interview instead of a series of individual interviews with these same informants was to gain the advantage of group interaction, to hear what they would say to one another as the conversation flowed freely. This worked very well with the women's groups. After the first few questions which I initiated, they were not inhibited and would respond to one another's comments. Particularly in Floresta, the women became so vocal and animated that the scene at times became a chaotic, and what appeared to be cathartic, outpouring of hardships as multiple women would speak simultaneously, interrupting one another. Though they all knew one another as members of a very small community, their discussion led me to believe that many of them do not talk about these issues often.

Both groups in Peixe-Boi were audio- and videotaped, while the group in Floresta was only audiotaped. I chose to videotape as a way to help with the transcription process, as I expected it to be difficult to keep track of which voice belonged to which speaker throughout the conversation. I had a volunteer assist with

running the video camera during the session, and I believe informants forgot about it after a while, so the impact of the videotape was small.

Resource Mapping

Because the local economy is natural-resource-based, information about natural resource use and its variation by gender was extremely important. In addition to asking about natural resource use in individual interviews, this information was obtained through a resource mapping exercise (Rocheleau 1995). Both men and women participated in creating resource maps and a list of species used by their community. These were created by men and women separately in order to see what type of variation in knowledge would surface. The mapping exercise also augments documentation on the gendered division of labor, the impact of technology on men and women, and gendered space at the household and community levels. This tool can bring to light differences in perceptions between community members and outsiders which are especially salient to co-management strategies of conservation, where policies are developed collaboratively and successful implementation depends on cooperation more than enforcement. The process of conducting Gendered Resource Mapping relies on first establishing an inventory of major landscape features, land uses, and land users. With this information established, participants create maps of community lands indicating major vegetation types, land uses, tenure and access, locations of specific resources harvested, sources of labor, and beneficiaries. From these maps, a matrix can be generated organizing land uses in relation to laborers and beneficiaries.

Men's Map and Species List

The mapping exercise was conducted in Peixe-Boi do Mamirauá, a community where I focused most attention. I was assisted at this time by Pedro Lucena, a college-educated Brazilian man. Pedro was extremely helpful in bridging the culture gap despite the fact that he was also a foreigner of sorts. Though he was Brazilian, he came from the northeast of the country, a place no less strange or distant to the people of Peixe-Boi. These people did not have a clear image of the size of Brazil or its regional variation. As an educated Brazilian from the northeast who spoke with a strange accent and vocabulary, Pedro could easily have been confused with someone from Portugal or some other distant land. Still, despite these oddities, his mastery of Portuguese and his gregarious nature made it easy for him to quickly win the hearts of the *Peixe-Boiños*.

The mapping exercises were conducted in April 2006. I had been visiting the community since February so I knew most everyone. In order to recruit participants, Pedro and I began by discussing the activity with Ana, daughter of the village founder. Ana often acted as liaison for many people outside the community, particularly Mamirauá staff. Ana also worked directly with me as an assistant and was critical in recruiting participants for this activity as well as the focus groups and individual interviews. After Pedro and I explained the activity to Ana and obtained her assistance in promoting the idea with community members, we introduced the idea to the community at a community meeting. I explained the process and the purpose. People seemed to be relatively positive; however, they were quiet when it came to scheduling a definite time to make the maps. Another foreigner was present at the meeting, a young Spanish intern for the dolphin research project. He had been working near Peixe-Boi for a number of months and knew people fairly well. He interjected his support for the idea and told people that by communicating with me, they were

gaining another way to voice their opinions about Reserve management. I don't know if his support was critical to gaining the agreement of the group, but it did seem to encourage people to speak up and agree to a time.

The men's mapping was to be done first, followed by the women's on a separate date. However, none of the men came to the initially agreed-upon meeting. They did, however, show up for the second scheduled meeting on April 15, 2006. We started with nine men and six boys. Various men left quickly after we had begun. Those who remained varied between 19 and approximately 65 years of age. Several of the older men were proficient fishermen who knew the region and its waterways intimately. All of the men and boys had experience fishing, but the younger men worked as nature guides and research assistants for Mamirauá Institute programs, so they had less experience fishing, in part because of age and in part because they do not fish as frequently as their older relatives.

Pedro and I asked the remaining group to construct a map of the area where they gather natural resources. First, they were asked to list all the major physical landmarks, boundaries, and ecological zones. In this case, these were mainly waterways, lakes, and various types of forests as well as the village area. Second, they were asked to list the species that are found in each of those. This became the basis for the Species List. Third, they were asked to put the first two sets of information into graphical form by drawing a map of the area and labeling where each of the resources is found. Last, they were asked to differentiate between resources that were collected, cultivated, processed, and/or used by men versus women.

They had difficulty with the list of land formations. The idea seemed confusing to them when I explained what I wanted. But once they understood, they made an extensive list. The list was very organized, separating lakes on one side of the *Paraná do Maiana* from the other. This listing process took 2 hours. Drawing the map then

took another 2 hours. The exercise was exhausting by the end, and clearly everyone was very tired, but they also seemed to take the task very seriously. They worked carefully. They had difficulty with labeling resource use by gender or by particular social group (e.g., artisans, or hunters). While the map was underway, we also constructed a species-specific list of fish and other aquatic animals that they use. Since the group spent four hours on this exercise and had actively brainstormed about the species they use, I didn't feel it necessary to have them re-check the list at a later date as I did with the women. I discuss these results in more detail in Chapter 4 on Natural Resource Use.

Women's Map and Species List

We asked the women to follow the same process as described above for the men's map and species list. There were eight women and teens present plus a number of small children they were caring for. This was primarily the same group of women that participated in the earlier focus group. These women are all mothers with the exceptions of the adolescents present. They are active in Reserve-related programs, primarily ecotourism and artistry, though two also work with the forestry group. Several also hold or have held jobs as cooks or assistants for Reserve programs. The women had no problem listing major land formations or ecological zones, and they were able to list many species found in many of the areas. However, their original map reached the boundaries of the neighboring villages but included detail only near their own community. There was a great deal of difficulty with beginning the map and with the perspective of the drawing. Once they overcame the initial discomfort with drawing and had marked the major physical landmarks, they were able to fill in many natural resources, particularly those close to the village.

After the original was made with the group of women, Pedro copied it, including all the features the women had marked on the map, and then we consulted with Ana, Eliana, and Francesca to add further detail. On this map, Pedro created symbols for each resource, and we had the three women consulting mark the gender that uses the resource next to each one.

The women's species list was initially generated during the mapping activity but was then added to by Francesca, Lana, and Ana individually. I sought out these individuals to check the map's accuracy and to fill it in further because these women are all very knowledgeable about their natural environment, and generally willing to participate in research activities. They are several of the individuals most active in community and Reserve-related activities. Lana was particularly knowledgeable about medicinal plants and was the source of many of the fish species on the women's list. Ana also was key in augmenting the species list and their use by gender. This was done at a later date during an individual meeting with me in Tefé.

Archival Research

As part of this study, I collected primary and secondary archival data from a number of sources. The Mamirauá Institute was invaluable for this type of information, but I also consulted IBAMA and IPAAM for maps and legal documents, as well as various individuals and groups from the Reserve who maintain documentation such as meeting minutes.

The state and federal environmental agencies were useful in supplying information regarding the establishment and management of the Reserve such as the legal decrees that founded the Reserve, mandates for sustainable development reserves within the state of Amazonas in general, the co-management agreement between

IDSAM and IPAAM, and documentation of the MSDR *Conselho Deliberativo* establishment and first year's activities.

The Mamirauá Institute has documented its involvement within the Reserve from its inception and houses a library which was extremely helpful in orienting me to the history of the Institute and the Reserve, the laws governing sustainable development reserves in Brazil, the Institute's programs in local communities within the Reserve, and much more. Use of the library allowed me to gather research reports, theses and dissertations, and various biological and social studies previously conducted in the Reserve. I also consulted numerous program and administrative reports that allowed me to build an understanding of the structure of the Institute, the goals of its programs, and its various activities within the Reserve. For example, the Institute creates an annual report of activities which date back to 1991. Through consulting these texts, I was able to follow the activities of the Institute throughout a 15-year span, beginning with the inception of the Reserve. The Institute also maintains an extensive electronic catalogue of project documents to which I was granted access. This allowed me to tap into meeting minutes from various years of the General Assembly meetings, the *Conselho Deliberativo* meetings, multitudes of program documents, and key information for my project, such as a list of political representatives from all the villages within the Reserve, which allowed me to evaluate ratios of male/female formal leadership. As I was interested in evaluating the effect of Institute programs on men and women within the Reserve, I collected data on the benefits received from both the artisan and ecotour projects. To do this, it was critical to first understand the goals and activities of Institute programs. Program documents from the Institute library were invaluable in providing this understanding. After this, I later interviewed Reserve residents and consulted various documents they kept so that I could track outcomes of the Institute initiatives.

While in the Reserve itself, I was also able to gather primary data such as minutes from several years of meetings of the artisans in Peixe-Boi. They also gave me access to sales records from the artisan project which supplied primary data on the gender of artisans selling products to tourists and how much they earned from this endeavor during the year 2005. I collected employment records from the ecotour project that allowed me to evaluate benefits received through male and female workers' salaries. I also obtained minutes from the town meetings in Peixe-Boi for several years with the names and genders of all attending as well as minutes from the Mamirauá Sector meetings for the year 2005. These public meeting minutes were useful in documenting political participation by men and women at both the town and sector level and complemented similar data for General Assembly and Deliberative Council meetings.

One source of information that bridges the Institute and the local people is *O Comunicador*, a magazine published by the Institute but written primarily by local Reserve residents. I did not conduct a formal content analysis of this magazine, but I collected all nine issues that had been created to date, from which I could glean a greater understanding of the issues of importance to Reserve residents.

Field Observation

Observations in the field were also an important source of information for this study. Power relations, whether between men and women or between different groups such as Reserve residents and authority figures, is a difficult subject to discuss candidly because behavior is embedded in socialized role expectations. People are not always conscious of the reasons for their behavior, and even when they are, they may not feel comfortable divulging this information to a researcher. Observation allows the researcher to gain insight into social behavior patterns that may be sensitive or

unconscious. This is particularly true for gendered power relations. I wanted to understand male and female roles in community politics, conservation programs, and household economics. I wanted to evaluate not only political representation by gender but also the type of political participation in which men and women engaged. This meant counting not only how many men versus women held formal leadership roles but also how many men versus women attended meetings and to what degree and in what manner they engaged in the political process. Did they stand up in front of the entire group to talk, or did they sit on the floor in the back of the meeting, as did one group of women? In this meeting, the women grouped together holding their babies surrounded by their other children, while the men all sat in chairs toward the front of the room. Meeting attendance was a particularly important venue for observing power relations in decision-making and representation. After taking careful notes about the dynamics I observed in these meetings, I used a participation typology following that developed by Agarwal (2001). In this typology, participation is categorized as follows:

- Nominal
- Passive
- Consultative
- Activity-specific
- Active
- Interactive

This typology gave me a way to systematically characterize the quality of participation I observed.

I also wanted to understand what Reserve residents believe makes a respectable man or woman, husband or wife, mother or father, etc., but I found my direct questions were not always met with direct responses. It was as if they did not know what I meant by “respectable,” and I got the impression that they found my

questions silly at times, or perhaps the participants felt uncomfortable discussing these topics with me. Whatever the reason for their reluctance to answer my questions directly, observation allowed me to watch how people reacted to one other. This helped me develop an idea of which behaviors were considered respectable and which were not. For example, it was clear that drinking was acceptable for men, as it was common, though drunkenness was not considered good. Women, on the other hand, were much less likely to drink alcohol, spend time socializing without their children present, or attend parties alone. Through passing time in the village, conversing informally with people, and watching them interact among themselves, I could observe normative behavior by both genders. I could see that fishing regularly was considered the duty of the man, and I developed the understanding that a good man is one who fishes regularly and provides for his family. Another example of how observation provided me with insight that would have been difficult to gain solely from interviews is in understanding men's and women's participation in politics. My interview schedule included questions about whether the respondent attended and participated in public meetings, but it was much easier to see who participates and to what extent by attending meetings myself. It was clear, for example, when I'd watch Ana or Julia at a public meeting that they were very much a dominant presence in the room. They would both take the initiative to make other people comfortable by carrying chairs to newcomers standing in the doorway, or volunteer to write notes on the board for the group, or facilitate a discussion or vote. Ana would take notes at most meetings she attended and often end up in a leadership role even if she was a guest in a distant community from her own. It would have been very unlikely that I could have come to understand the ways in which she has adopted a leadership role if I had only asked her, or even others, to describe her role to me. But by watching various types of meetings over time, I developed a picture of male and female

participation in public meetings and of how Ana's behavior contrasted with that of the majority of other women. During the time I was in the field, I documented my observations by taking notes, particularly during meetings that I attended. Some of the meetings I attended included town meetings in Peixe-Boi, Sector meetings for several sectors, groups of artisans meeting to work together, Reserve residents meeting to discuss specific problems within the Reserve, meetings called by Mamirauá staff members to discuss specific issues with Reserve residents, and the annual Mamirauá staff conference where researchers present their findings. I also documented many aspects of daily life in the Reserve through hundreds of photographs.

Transcription, Coding, and Analysis

Of the 90 interviews I conducted, 61 were transcribed into Word documents. Due to resource limitations, it was not possible to transcribe all 90 interviews, nor was it necessary to address my research questions. As is always the case, some interviews prove richer and more on target than others. I chose the richest interviews to focus on, making sure that I had a good selection from each of my various categories of participants, and had those transcribed.

The chapter on natural resource use was initially coded manually on paper and themes compared manually "long-table" style. The remainder of the coding and analysis was done using Atlas.Ti. For each analytical chapter, I chose a selection of interviews for analysis, using the richest and most salient interviews for the particular research question at hand. I made this selection by consulting my field notes and the interview summary sheets I had made following each interview. Then, using Atlas.Ti, I coded each interview by marking relevant themes. In some cases it was necessary to later do second and third rounds of sub-coding where a theme such as *Agricultural Decline* was then broken down into a variety of more specific sub-themes such as

Description of Decline, Reasons for Decline, and Consequences of Decline. The process then involved further refinement by taking, for example, *Reasons for Decline*, and breaking it down further into even more specific sub-themes such as *Agricultural Labor is Hard Work, High Water Take Crops, and Youth Lose Interest.*

Atlas.Ti allowed me to identify and organize themes systematically. As this was an inductive research process, I created more themes as the analysis progressed. When I came to the chapter on the integrity of the family, for example, I used the search tool to cull out all quotes on family-related topics such as *Small Children, Husband, Marriage, Household Decision-making, Gender Relations, and Household Purchases.* I could then print off an organized list of quotes to work with. Atlas.Ti also allows you to organize themes visually into conceptual maps, which help the researcher identify associations.

Limitations of this Research Project

Limitations of this study include that the findings are not generalizable to a wider universe, such as all Sustainable Development Reserves or all protected areas, for example. This is the case with qualitative studies. However, my goal was to identify patterns that can be conceptually transferred to similar contexts. I was able to draw conclusions about the Mamirauá conservation effort from which one might draw parallels to other similar conservation programs, but these findings are not representative of participatory conservation per se.

Aside from the limitations attached to qualitative methodology, the major limiting factor of this particular study was time in the field. There is no question that more field time and greater exposure to different parts of the Reserve would have produced a more robust study. One of the most significant challenges of this study was inherent in the very subject of studying norms and power relations. These abstract

ideas were difficult to explain to the local population, most of whom did not have more than a sixth-grade education. These also tend to be difficult concepts for people to discuss freely with a stranger, particularly a foreigner. Ana was able to assist me in overcoming this limitation to some degree, but clearly this was still a limitation. Further complicating my relations with local people was my association with the Mamirauá Institute. When introducing myself, I would be sure to tell informants that I was a graduate student from Cornell University in the United States conducting a doctoral dissertation and not an employee of the Mamirauá Institute. However, because the locals were so used to meeting researchers somehow associated with the Institute and because I was receiving in-kind support from the Institute such as the use of an Institute boat and research station, I always had the sense that people did not necessarily distinguish me from the Mamirauá employees. This had its advantages and disadvantages. I think it often helped me gain initial access to interviews, as people were eager to see if there might be some benefit from involvement with an Institute study; however, I think it also hindered my ability to find out what people really thought of living in a Reserve. This was particularly an issue when it came to discussing how people feel about regulations. I most often would hear how great it is to live inside a reserve, much of which sounded like a memorized “party line,” leaving me still wondering if there wasn’t more that the informant was afraid to tell.

Other challenges inherent in this type of study included working in a foreign physical, cultural, and linguistic environment. The Brazilian Amazon is a challenging environment in which to conduct research. My original research plan was revised substantially due to both unanticipated obstacles and new insights gained once in the field. My ability to anticipate many of the realities of conducting fieldwork at Mamirauá was limited by the inaccessibility of the Reserve. Since visitation by outsiders is monitored and restricted by the managing agencies, a prospective

researcher is not free to enter the Reserve for exploratory research. I was able to do so in a limited fashion only by joining the ecotour program as a tourist for three days. This, of course, directed what I was able to experience in those three days. I was able to visit one village, which happened to be Peixe-Boi do Mamirauá, the same community I eventually ended up focusing on. However, the fact that it was not legally possible for me spend a more extended time within the Reserve during the initial exploratory phase limited greatly my understanding of what would be entailed in conducting fieldwork in that setting and my ability to begin working out the details of how I would undertake the task.

One way in which I bridged the cultural and linguistic gaps was to hire several Brazilian assistants. While in the field, I was almost always accompanied by either Pedro or Ana, or both. This was an excellent team because Ana is a native of the Reserve, while Pedro is a college-educated bilingual (English/Portuguese). As previously mentioned, Ana knows the local physical and social terrain intimately, and while Pedro was an outsider, he was generally able to successfully seek out the answers to any questions I found difficult to ask Ana (or other informants) directly. I also relied on the staff members at the Mamirauá Institute as resources with whom I would consult about my many questions. Last, to obtain the most accurate results, transcription was completed by Pedro or Dani, both native Brazilians and Portuguese speakers.

Conclusion

The Mamirauá Sustainable Development Reserve is a particularly good field site in which to study the effects of program participation on local gender structure. The extensive activity of these programs in the highly targeted areas, made accessible through an impressive management infrastructure, provided an excellent opportunity

for study. The newness of the Reserve, established only 15 years prior to fieldwork, also made this site particularly illustrative since many adults could still recall life before the Reserve and discuss ensuing changes.

By combining an ethnographic approach of using semi-structured interviews, oral life histories, focus groups and observation with archival research, and feminist research tools such as resource mapping, I was able to develop a picture of how gender structure is affected in a number of important ways by the introduction of a participatory conservation program. This also allowed me to identify ways in which women's participation as natural resource managers and conservationists is constrained by gender relations and ways in which the Mamirauá project both assists and fails to assist women in overcoming those hurdles.

CHAPTER 3:

STRUCTURE AND AGENCY IN THE TRANSFORMATION OF GENDER

We can choose only from options that exist, in fact or at least in imagination.

—Barbara Risman (1998:7) in Gender Vertigo

When we do gender we re-create the expectation that men and women not only do but ought to behave differently.

—Barbara Risman (1998:7) in Gender Vertigo

Gender . . . has nothing to do with you, so do not take it personally! Gender is one way of organizing social life, from the intimate desires of individuals to the mass markets of the economy to the vast bureaucracies of corporations and governments. Gender is a place in social relations. Gender positioning consistently results in women's individual and collective sexual, political, economic, and social subordination.

—Lisa Brush (2003:44) in Gender and Governance

Gender relations are changed by the transformation of rural agrarian life. They are changed by the imposition of modern social structures which are introduced by church, state policy, international development initiatives, media, educational systems, and more. Likewise, gender relations are also affected by conservation interventions. These exogenous social carriers introduce or strengthen a number of modern institutions such as the capitalist economy, democratic forms of political representation, and egalitarian ideals of civic engagement. Gender relations are changed as they are influenced by all these structures, but this is only one part of a cyclical process. The transformation of gender relations themselves is an important engine of change (Bock and Shortall 2006). Nightingale (2006:166) concurs by stating that “gender is a cause of environmental change in the sense that gender is inextricably linked to how environments are produced.” This is why conservationists need to be concerned with gender. Development and conservation interventions change local gender relations, which both results in and is a result of, some alteration in the

structure of male dominance. In addition to inherent issues of social justice, these changes affect conservation outcomes.

Human agency, and therefore environmental behavior, is greatly influenced by gender relations. In particular, men's and women's relationship to the environment is greatly determined by the socially constructed norms determining the gender division of labor. What men and women do, who has access to and control over resources, what knowledge and experience is accumulated, and who has decision-making power are all contingent on socially accepted ideas of appropriate gender relations. As human activity is fundamentally structured by gender, this is a critical axis of investigation in order to understand human impact on the environment. However, norms regarding gender roles and relations of power are historically and contextually specific. These social relations are highly dynamic and constantly under re-construction. To understand relationships to the environment, we need to understand how gendered relations are created, maintained, and changed.

In this dissertation, I incorporate both ideological and material aspects of social structure as I investigate how gender structure is transformed and, in some cases, reinforced through the local Reserve residents' participation in conservation programs. More specifically what I aim to understand is how internalization, social relations, and structural constraint operate to at times reproduce gender while at other times transform it from previous iterations, mutating structure into something different. In some cases, this is something unexpected—possibly a desirable outcome, or possibly something unwanted. In this study, I ask how participation in introduced programs affects the gender division of labor as programs target their efforts in highly gender-traditional ways (e.g., forestry and fishing for men; artistry and health for women) yet also create new openings for women to enter into non-normative gender roles. I ask what ramifications these small yet significant alterations have on power relations

between men and women and social organization of the family. I also seek to understand how participation affects women's adoption of leadership roles. In the case of Mamirauá, we see interventions both reinforcing and disrupting the norm, intentionally and unintentionally.

For forty years, despite shifts in terminology and focus, feminist development scholars and practitioners have been calling for the empowerment of women. More recently, feminist scholars interested in natural resource management have made the case that for reasons of both efficacy and equality, devoting attention to women's role in conservation projects is essential. Participation holds the promise of equality for *all*—even though in practice, projects often fall short of this goal. Clearly women have made great strides as gender has become mainstreamed in development policies over recent decades. Furthermore, in response to this increased emphasis on social equality in development, gender analysis, gender equality, and women's empowerment have also become more common components in conservation projects, if only in some cases as a means to achieve conservation goals.¹⁸ Still, social outcomes of conservation

¹⁸ For example, The United Nations Environment Programme (UNEP) with the International Union for the Conservation of Nature (IUCN) and the Women's Environment and Development Organization (WEDO) developed the UNEP Gender Plan of Action (2006:3), which states, "The importance of gender mainstreaming in environmental and poverty eradication policies has been recognized in a wide range of global agreements and forums, including chapter 24 of Agenda 21 (United Nations Conference on Environment and Development, 1992); The Johannesburg Plan of Implementation World Summit on Sustainable Development, 2002); paragraph K of the Beijing Platform for Action (Fourth World Conference on Women, 1995); the World Conference on Human Rights (1993); the International Conference on Population and Development (1994); the World Summit for Social Development (1995); the Millennium Declaration (2000); and the requirements and agreements set out in the Convention on the Elimination of All Forms of Discrimination Against Women."

Also, the IUCN has made the following statement: "Women's empowerment improves their access to resources, enhances decision-making, and leads to cumulative benefits of improved environmental management and poverty reduction for communities. IUCN has identified gender equality as a priority because environmental and development problems cannot be solved by only half of the world's population." <http://www.cbd.int/gender/doc/iucn-unga-luncheon-en.pdf>

See also Aguilar and Blanco (2004) for a statement on the inclusion of gender equality in the Convention on Biological Diversity. <http://www.rimisp.org/getdoc.php?docid=6581>

A description of a World Wildlife Fund project states, "WWF is focusing on conservation education, eco-tourism and women's empowerment as strategies to achieve long-term results. Because women play a significant role in utilizing, conserving, and managing natural resources, the KCAP emphasizes empowering women as a proven way to achieve conservation results in the community."

projects are not necessarily positive or equitable, particularly for marginalized groups including women. Though gender equality is now a more familiar term among conservationists and may at times be found on project agendas, outcomes for women are highly variable. In this dissertation, I inquire how a participatory sustainable development and conservation project can produce both empowering and disempowering results for women. Viewing gender, as it is constructed in modern societies, as a systematic form of inequality, I investigate to what extent participatory natural resource management empowers women and dismantles this hierarchical gender system versus reproducing inequalities. The three quotes that introduce this chapter represent the three main perspectives gender scholars have used to theorize gender: internalization, interaction, and structure. These correspond to the individual, relational, and institutional levels of analysis. I argue that in order to understand how gender is reproduced and transformed, we must integrate these three perspectives and address all three levels of analysis. In this chapter, I present a theoretical understanding of gender in Western society as a social structure where male domination is both structural and symbolic. I incorporate both structural and interactionist/ideational models and draw on Giddens' theory of structuration to explore how the introduction of the structures of modernity, such as the modern polity, the market economy, wage labor, rapid transit, communication and other forms of

<http://www.worldwildlife.org/what/wherewework/easternhimalayas/kanchenjungaconservationareaproject.html>

Conservation International's *Healthy Families, Healthy Forests Program* offers another example of conservation embracing gender analysis and gender equality. The following document describes the collaboration between CI and USAID to realize this program as well as noting a number of other CI projects that account for gender:

http://www.usaid.gov/our_work/global_health/pop/techareas/environment/gender_ci.pdf

The Nature Conservancy (TNC) also collaborates with USAID through its *Parks in Peril Program* to include gender considerations in their conservation efforts. See the following document for a description of various conservation programs that include gender analysis, gender equality, and women's empowerment as a means of achieving conservation objectives:

<http://www.parksinperil.org/files/gender.pdf>

technology, and applied biological science, as well as the introduction of modern, Western cultural influences, allow women new forms of agency that then recursively alter the gender system, which is itself a structure. From this platform, I discuss ways in which changes in gender relations within a natural resource management project are meaningful shifts in the wider social power structure. For example, it may be through women's participation in conservation-driven economic alternative activities that women enter the market economy, but the outcomes such as independent income, increased mobility and autonomy, and greater political voice and bargaining power reach far beyond conservation objectives.

Why Is Gender Important ?

Why should scholars, conservationists, or anyone care about gender specifically when considering issues of natural resource management? What do women systematically share as a social group? And how does gender differ from other divisions between people, such as race or class? These are some of the questions I address in the following section. Despite myriad contextual differences across the globe, there are some commonalities in women's structural position and experience that cultural feminists argue create a distinctive female reality. I argue in this dissertation that this commonly shared woman's experience influences conservation outcomes. Josephine Donovan (2001:184) lists five ways in which women's lived experience is systematically different from other groups. First, women have historically experienced political oppression where they do not control the realities that shape their lives. Arranged marriages, in some cases before the age of adulthood, would be an example. Second, women are consistently responsible for the greater share of domestic labor across cultures. Third, women's economic function is disproportionately focused on production for use as opposed to exchange, limiting the economic value of their labor.

Fourth, women experience physical events and bodily upheavals such as menstruation, pregnancy, childbirth, breastfeeding, and menopause that can create significant constraints in mobility and labor capacity. Whether due to lack of birth control, religious beliefs, or cultural norms, it is not uncommon in developing countries for much of a woman's adult life to be spent in the limiting and vulnerable state of pregnancy (often while carrying and nursing older siblings). Finally, women in many places across the globe are consistently victims of male violence through rape, sexual harassment, and physical abuse. Cultural feminists assert that this common structural experience creates a women's standpoint, a lived experience and perspective that is systematically different than that of men but similar for women across cultures. The social constructivist view of women's subjugated position as argued in cultural feminism is akin to the ecofeminist view offered by Buckingham (2004), where women are seen as both particularly vulnerable to environmental problems and highly motivated to solve them because of their socially constructed position as child-care providers, homemakers, subsistence producers, and subjects lacking control over natural resources.

Ridgeway and Correll offer another argument for the importance of gender in social interaction. Citing studies in cognitive psychology (Blair and Banaji 1996; Brewer and Lui 1989; Stangor et al. 1992), they argue that people unconsciously categorize one another by gender as the first means of making sense of who we are in relation to the other. That is to say, before we evaluate other people by race, age, class, or some other characteristic, we generally first decide their gender and what that means for us. Ridgeway and Correll are careful to explain that they do not imply that gender is the most important axis of difference in all contexts but that evidence of our tendency to first sort others by gender demonstrates the power of gender as an organizing principle in society. They go on to explain further the import of sex

categorization as a process that social cognition studies (Blair and Banaji 1996) have shown “automatically activates gender stereotypes, including gender status distinctions, and primes them to affect judgments and behavior” (Ridgeway and Correll 2004:515). So not only do we immediately sort others into gendered categories upon interacting, but our cultural beliefs about what those categories signify in terms of expected behaviors and power relations influence our interactions.

Ridgeway and Correll (2004) developed a theory of how gender is reproduced based on cultural beliefs and social-relational contexts. They argue that though social-relational contexts influence outcomes in all social hierarchies such as race and class, these contexts are particularly powerful in the gender system. They assert that men and women come into contact with one another as advantaged and disadvantaged actors with greater frequency and on more intimate terms (2004:512) than do people in other systems of difference. We confront people of other genders in our workplace, homes, and families, and most social groups. They add that gender is an aspect of biological reproduction and that it divides the population into two fairly even groups. They offer these arguments as support for the importance of the social context in determining gender, but I will add that these examples also speak to the ubiquity of gender in our lives. Gender is all around us every day, everywhere. It is an inescapable, pervasive causal force that powerfully, yet in subtle ways, influences the outcomes of our interactions. This is why gender matters. It matters to society at large, and it matters in the context of conservation.

Why Is Gender Equality in Conservation Important?

Thomas-Slayter, Rocheleau, and Kabutha (1995) present four main reasons why gender influences natural resource management outcomes. They assert that the responsibilities for managing resources are determined by gender; projects may

require women to undertake new responsibilities without adequate knowledge, technology, resources, and time; women are the majority of the rural constituency, causing them to be the most affected by environmental and development policies; and women often take the lead in responding to environmental crises as a result of their direct ties to subsistence-based livelihoods. In addition, McDougall (2001:55) argues that “gender and diversity are relevant to sustainable forest management because stakeholders’ options and constraints in decision-making (as well as resulting actions) are determined by their different gender and diversity identities, which include their roles, knowledge and responsibilities.” The gender-and-diversity approach elaborated by McDougall includes gender as one of various critical social divisions, while other researchers working with gender analysis see gender as a primary category under which other differences can be classified. Leach (1994) asserts that “local people’s forest management and use cannot be understood without taking gender issues into account.” Gender is a critical division present in every society. Gender identities vary greatly across cultures, but gender is a universal concept by which human beings create identity, organize social relations, and assign meaning to events, processes, and the natural world (Harding 1986:18). Harding argues that gender should be theorized as “an analytic category within which humans think about and organize their social activity rather than as a natural consequence of sex difference, or even merely as a social variable assigned to individual people in different ways from culture to culture” (Harding 1986:17). Because gender determines in many ways how men and women interact with their environment, it is a critical factor for conservation efforts. Not only is acknowledgment of the influence of gender necessary but achieving gender equality is crucial to conservation success.

There are two main arguments why gender equality is critical to conservation: social justice and efficacy. Lack of gender analysis and consultation with women can

result in conflicts between genders and increases in existing inequities as well as project failures and degraded environments. Both arguments are based on research that shows significant differences between men's and women's relationships to the environment (IDS 1995). Men's and women's priorities and natural resource use often varies (Rocheleau 1996; Ashby 1990; Fernandez and Salvatierra 1996). Rocheleau (1995) and Heyzer (1995) document a gender gap between rights and responsibilities, while Sarin (1995) and Shah and Shah (1995) showed that village forests have different meanings for men and women. Fernandez and Salvatierra (1996) found that women in the Peruvian highlands were more interested in livestock production, while men were more concerned with problems relating to crop production. Gendered difference was also identified in the selection of preferred bean varieties in Pescador, Columbia (Ashby 1990). Though men were primarily responsible for crop production, women's preferences were found to influence adoption of new varieties.

In a reforestation project in the Dominican Republic, Rocheleau, Ross, and Morrobel (1996) found that project participants were affected differently by class and gender, as was acceptance of *Acacia* as a timber crop. This project demonstrated how power relations and gendered division of labor resulted in divided interest in the project. Men wanted to plant the timber crop for commercial sale, while women were concerned that commercial crops might squeeze out subsistence crops. Women were more interested in fruit trees, timber trees that were appropriate for intercropping, and trees that produce portable products that could be readily harvested for sale when cash was needed. In some cases, women were not allowed to plant *Acacia* even in the patio, a traditionally female-managed area. In other cases, men planted *Acacia* in areas that were previously used by women for vegetable gardens. All of the women in this study lived in households that were legally headed by men, where an inequitable distribution of power across gender lines determine the division of labor, control over resources,

and benefits accrued from project participation. For women, planting *Acacia* for timber was not advantageous and in some cases even threatened their current livelihood strategies, whereas for men, the crop presented potential for increased cash.

As demonstrated in the Dominican Republic case, livelihood dependence on natural resources may vary by gender, which has implications for possible interventions. Joeke, Leach, and Green (1995) assert in a review of the literature that gender relations have a powerful influence on how environments are used and that power relations more often than not tend to favor men's access and control of natural resources. In her study in East Kalimantan, Indonesia, McDougall (2001) found that women unanimously allocated more power to men. Though they cited inequities, they couldn't envision significant changes in current gender responsibilities, so any additional decision-making power implied greater burden of responsibility and potentially heavier workloads.

An argument for the necessity of gender equality is that because the majority of the world's poor are women, they usually have more responsibilities and less free time to be involved in research or development projects, especially without the distraction of children present (McDougall 2001). Conservation efforts operating within the sustainable development paradigm, where both human well-being and environmental stability are valued, must address inequities for women in order to achieve well-being for the population as a whole.

Another argument for gender equality, first made in development policies such as Women in Development (WID), and later applied to the environment, is the efficacy argument. Women can be a source of labor for conservation projects. Women are concerned with health issues so may be more interested in maintaining environmental health. While women's intimate knowledge of the environment can be used to increase project success, their lack of participation can lead to failure, such as

seen in a Mali water project (Joeke, Green, and Leach 1996). In this case, village leaders appointed groups to oversee water management and sanitation. Most of the caretakers appointed were male village elders. Women were given very little decision-making control over the project, but in addition to their usual responsibility of gathering water, they were also expected to abide by protocols established by male leaders and to carry out maintenance activities as directed by the men overseeing the project. The discrepancy between male-directed decision-making and female implementation of tasks led to project failure. Wells were not cleaned or maintained as specified, since women saw this as an addition to their workloads. Women did not follow protocols that were impractical, such as removing shoes before entering the well area, since replacing shoes while balancing 55 pounds of water on one's head was difficult. Men wouldn't carry out the maintenance duties, as water provisioning was culturally viewed as women's work, but women hadn't bought into the maintenance plan since they hadn't been part of the project design and decision-making process. This and the other examples discussed above illustrate how failure to account for gender can result in both inequitable situations for local people and even project failure. This is why gender matters for conservation.

Traditions in Women, Development, and Environment

Interest in the influence of gender on project outcomes and gender equality as a goal emerged through the discourse on women in development and eventually evolved as salient within the global environmental discourse as a result. According to Moser (1993), in Gender Planning and Development, there has been a progression of policy approaches addressing gender issues globally with five major foci including welfare, equality, anti-poverty, efficiency, and empowerment. The themes of women and environment first intersected and became a subject of discussion within the

development circles about forty years ago. It was Esther Boserup's seminal book, Women's Role in Economic Development, in 1970 that first investigated the impacts of economic modernization on women in the development process and uncovered women's critical role in agricultural production that previously had been unacknowledged within development and academic circles. This resulted in the institution of the Women in Development (WID) approach within international development policy. Environment and women's relation to it was not yet explicitly a concern within academic, conservation, or development circles; nonetheless, I argue that it is within this period that we find the beginnings of these concerns, as many of women's "development" issues were closely linked to the environment and use of natural resources.

Women's *development* projects since the United Nations International Year of the Woman in 1975 have shown a progression in development thinking over the past forty years from Women in Development (WID), to Women and Development (WAD), to Gender and Development (GAD). The conceptual focus of these various approaches also evolved from emphasizing issues first of women's visibility, to women's agency and eventually to women's identities (Bock 2006). In the 1980s efforts to apply WID to the environmental domain resulted in the corresponding Women, Environment, and Development (WED) approach, while GAD principles can be recognized in a number of more recently emerging Gender, Environment, and Development (GED) approaches such as feminist political ecology (Rocheleau et al. 1996), feminist environmentalism (Agarwal 1991), and Women, Culture, Development (Bhavnani, Foran, and Kurian 2003).

WID, WAD, and WED

The defining characteristic of WID is that it takes an integrationist approach to women in development. That is, it does not question the liberal economic view that markets and development are essentially benign but seeks to integrate women equally into these spheres so they may benefit from this access and to increase project efficiency through women's added labor (Kabeer 1994). WID does not critically examine the existing development paradigm and is mainly concerned with fulfilling women's practical gender needs¹⁹ (i.e., survival and sustenance needs). Strategic gender needs are not addressed. Women's participation is uncritically considered beneficial without an examination of possible negative impacts of inclusion or of the extent to which participation takes place. In this view, women are considered as one homogeneous group with a coherent set of interests, distinct from men's, but not affected by other axes of difference such as age, ethnicity, class, etc. The primary project focus revolves around women's activities, the implementation of which results in an emphasis on special women's groups.

WAD was another step along the way. Influenced by dependency theories of development, WAD emphasizes the relationship of women and development and views women as critical economic actors. However, like WID, WAD projects focused on economic activities, did not pay sufficient attention to women's reproductive roles,

¹⁹ Strategic gender needs:

The needs women identify because of their subordinate position to men in their society. Strategic gender needs vary according to particular contexts. They relate to gender divisions of labour, power and control and may include such issues as legal rights, domestic violence, equal wages and women's control over their bodies. Meeting strategic gender needs helps women to achieve greater equality. It also changes existing roles and therefore challenges women's subordinate position. (Moser 1993:39)

Practical gender needs:

The needs women identify in their socially accepted roles in society. Practical gender needs do not challenge the gender divisions of labor or women's subordinate position in society, although rising out of them. Practical gender needs are a response to immediate perceived necessity, identified within a specific context. They are practical in nature and often are concerned with inadequacies in living conditions such as water provision, health care, and employment. (Moser 1993:40)

and were criticized for burdening women with additional labor. WAD focused on class distinctions but otherwise homogenized women, ignoring other social variables of difference.

Lagging somewhat behind WID and WAD, WED was developed in the 1980s to integrate women's issues into environmental projects. Similar to WID, the main thrust of the WED approach was to fully include women in environmental projects both for women's benefit and to avoid project failures due to women's exclusion. Women were initially portrayed as victims of environmental degradation, bearing the brunt of the effects of pollution, deforestation, and droughts, particularly through the added labor and stress these crises imposed. Later this shifted to a perspective which emphasized women as the primary users and managers of natural resources (Dankelman and Davidson 1988). Because women are responsible for supplying natural resources for daily subsistence, their interests are seen as closely allied with environmental protection. What's good for the environment was considered good for women, and *vice versa*. In this view, they are also seen as holding deep environmental knowledge based on their intimate relationship with nature. Like the WID approach, WED emphasized women's roles or what they do in relation to the environment, but not their interactions with men or with one another as members of various age, class, or ethnic groups with potentially conflicting interests. Like WID, women are treated as an undifferentiated group. This approach involves assessment of women's roles and use of the environment, targeting the appropriate group for project activities, and inclusion of women's projects, usually through women's groups.

Critics of the WED approach find the exclusive focus on women to be problematic when men are also natural resource users whose roles synergistically interact with women's. Both men's and women's environmental relationships are mediated through social relations that determine the division of labor (i.e., how people

use the environment), resource access and control, and decision-making power. Similar to cultural ecofeminism, WED also posits a special relationship between women and the environment (Joekes, Leach, and Green 1995).

These problematic assumptions have led to disappointing results in practice. Projects developed with the WED approach, despite good intentions, have at times found success at women's expense (Joekes, Leach and Green 1995). Like other participatory development projects, devolving authority to the community level can be detrimental to women's interests due to their unequal representation and decision-making power. Because women are treated unproblematically as a homogeneous group, sub-groups of women can be overlooked and further marginalized. WED projects have also failed due to these uncritical assumptions. Women may refuse to participate in projects if they don't see a direct benefit or are required to invest additional labor when benefits are not equitably distributed.

GAD and GED

Critiques of the WID approach led to the development of a new approach that focuses on gender relations between men and women, instead of on women alone. The Gender and Development (GAD) approach, which has only recently begun to be applied in the environmental domain under the title *Gender, Environment, and Development* (GED) (Leach 1992; Joekes, Green, and Leach 1996), challenges the essentialized woman–nature connection of WED and ecofeminism (Bhavnani, Foran, and Kurian 2003). In this view, women are not assumed to be inherently closer to nature than men, though there is acknowledgment that both men and women's relationships to the environment are shaped by gender norms. Therefore, these relationships are dynamic and not rooted in essentialized, biologically based orientations and characteristics. This approach challenges the assumption that women's interests are synonymous with environmental

protection. Environmental relationships are only in part dictated by resource-based activities. Women's close interaction with nature is due not necessarily to inherent connections but to gendered divisions in labor and possibly the lack of alternative livelihood options, which implies that their interests may in some cases be better served by projects that are not natural-resource-based. A particularly important shift from the WED approach is the disaggregation of groups of men and women by other social axes of difference. Also very important, in addition to roles, gendered relations are stressed where tenure, type of property rights, resource control, and decision-making ability are emphasized as well as power relations with social institutions at varying levels. The historical trends underlying these relations that maintain women's disadvantage are examined. This approach also considers the impacts of shifts in global and regional markets on these relations. In contrast to WED, participation is not assumed to be inherently beneficial to women. Full participation in decision-making and project planning is the ultimate goal, but gendered power differentials are considered. Women's potential lack of control over labor, resources, and benefits is acknowledged.

Fundamentally breaking with WID policy, the GAD perspective addresses strategic gender needs and critically examines the impact of development, finding women's integration into markets at times beneficial while exposing instances where inequitable social relations frustrate this route. GAD questions certain fundamental tenets of neoliberal economic theory such as the assumption of the "harmonious household," a unified family unit overseen by a benevolent male head who fairly distributes benefits to other members. As these various policy perspectives have shifted over the years, so have the ways in which scholars, practitioners, and policy-makers conceptualize the issues of women and environment.

Women and Environment

Ecofeminism

One of the earliest treatments of women and environmental issues became known as ecofeminism. Though heavily critiqued, the authors writing from this perspective contributed greatly to making women's environmental relationships more visible. Ecological feminism, as it was originally named, traces its roots to the feminists of the mid-1970s who began to theorize the human–environment relationship as a duality in which women may be closer to nature and men to culture. This leads to the postulate that women, as closer to nature, have an innate understanding of environmental functions and are better suited for environmental protection (Diamond and Orenstein 1990; Shiva 1988). Men are thought to be closer to culture, and culture is viewed as superior to nature, which leads to the underlying premise of ecofeminism, which is that the domination of women is closely tied to the domination and degradation of nature. In Staying Alive: Women, Ecology and Development, one of the most influential works from this body of literature, Vandana Shiva (1989) argued that Indian women have an inherent connection to nature which inspires them to risk their lives in protest against destructive forestry practices. Shiva drew on ancient religious beliefs to assert that women are not only closer to nature but even more powerful than men. Women's struggles to resolve issues of resource degradation are presented as alternatives to traditional Western development schemes. Though her work has been strongly criticized for inaccuracies, and for essentialist, universalizing assumptions about women, she has been an influential global figure in inspiring women to environmental action. Not only did Shiva's work make Third World women's development and environment issues more visible but she argued against Western development itself as a masculine project, derived from colonialism. Through the use of reductionist scientific paradigms and the introduction of capitalism, development

has altered women's material reality in ways that has at times increased their actual poverty as well as their poverty relative to men. An example is the expansion of cash crops, which has generally drawn men into the cash economy but undermined women's subsistence roles. Shiva argued that development has done violence to women and environment, systematically undermining women's traditional natural resource use roles (Leach 1994). In this sense, conservation projects built on the sustainable development paradigm may have harmful, unintended consequences for women and families. On the other hand, various benefits from women's involvement in economic alternatives can also be observed. In this study, I aim to examine how women's participation in conservation initiatives based on ideals of sustainable development results in both costs and benefits to women and subsequently affects gender relations.

Feminist Environmentalism

Taking a more structuralist approach, Bina Agarwal developed feminist environmentalism as an alternative to the essentialist critiques of ecofeminism. Like the ecofeminists, Agarwal (1992, 1994, 1997) sees women as having a distinct tie to the environment which provides them with privileged knowledge and strong conservationist motivations; however, she argues that the reasons for this relationship are based in women's material labor and gendered responsibilities. Agarwal sees material conditions as key factors in producing environmental problems. As these conditions vary by gender, so too do environmental problems vary. Women are hardest hit by environmental degradation or policy change that limits traditional resource use. Therein lays their motivation to protect environmental resources, according to Agarwal.

Feminist Political Ecology

Also following a structuralist approach, a third theoretical perspective on women and environment is feminist political ecology. This approach sees gender as structuring access to knowledge, space, resources, and political processes, resulting in differential experiences of environmental change for men and women. Feminist political ecology has its roots in cultural and political ecology, feminist geography, and feminist political economy (Rocheleau et al. 1996). Building on these earlier perspectives, feminist political ecology (Rocheleau et al. 1996; McDougall 2001) considers the social, political, and economic contexts within which environmental policies are created. This approach addresses how social divisions influence the uneven distribution of resource access and control. It is concerned with how social relations, particularly gender relations, shape resource use; how various groups are affected by these relations differently; and how the ecological context recursively shapes social relations. This approach also examines local experience in the context of global change.

Feminist political ecology focuses on gender-differentiated uses and relationships to the environment and on how broader social relations influence women's use of natural resources as opposed to men's. The primacy of gender is what distinguishes feminist political ecology from its political economy and political ecology antecedents. Rocheleau et al. (1996) describe gender as a "critical variable in shaping resource access and control, interacting with class, caste, race, culture, and ethnicity to shape processes of ecological change, the struggle of men and women to sustain ecologically viable livelihoods, and the prospects of any community for sustainable development." The main tenet of feminist political ecology is that human–environment relations cannot be understood in the absence of understanding gender issues because gender inequalities and difference pervade science, rights, institutions,

and networks of social change. The main themes of my study that resonate with this perspective are gendered knowledge, rights, responsibilities, and institutions examined through the influence of the environmental context, the division of domestic and resource-based labor, participation in conservation programs, and the impact on family cohesion.

Empirical Studies on Gender and Environment

This study contributes to a growing body of literature on women and environment. Though it is small relative to other sub-topics in development and environmental studies, there is now a significant literature. Reflecting the complexity of the various conceptual and policy approaches to women and environment, extant empirical studies have diverse foci, expanding our understanding of gender and environment issues in numerous ways. The focus of these efforts has been on documenting inequalities in participation (Agarwal 1997; Buchy and Rai 2007); encouraging women's participation in projects (Agarwal 1997; Meinzen-Dick and Zwartveen 2001); collective environmental action (Rocheleau et al. 1996); women's relationship to nature (Warren 1990; Shiva 1989; Mies and Shiva 1993; Jackson 1993; Joekes, Leach, and Green 1995; Leach 2007); gendered knowledge (Fortman 1996; Fortman and Nabane 1992; Rocheleau et al. 1996; Momsen 2007); roles and labor burden (Dankelman and Davidson 1988; Leach 1992; Agarwal 1989; Cleaver 2000); women's interests (Leach 1992; Dankleman and Davidson 1988) and rights (Rocheleau 1995, 1996), including property rights (Brunt 1992; Agarwal 1994; Meinzen-Dick et al. 1997), particularly access to essential natural resources (Meer 1997; Buchy and Rai 2007; Agarwal 1997; Torri 2010). Gendered inequalities in costs and benefits (Cleaver 2000; Mayoux 1995; Meinzen-Dick and Zwartveen 2001); gender in policy discourse (Crewe and Harrison 1998; Kurian 2000); geographic

mobility (Elmhirst 2001); and gendered effects of environmental degradation (Agarwal 1991, 1997) have also been themes that have received attention in the literature.

The Contribution of this Study

This study contributes to the feminist environmental literature through examining how social organization, specifically gender relations, is both transformed and reproduced through the introduction of modern social structures in the form of conservation efforts. This is essentially a study about power—power between men and women—and how exogenous forces such as a conservation program act as the social carrier of modernity, holding the potential to radically transform relations of power as well as the power to reinforce the status quo. Using the framework established by R.W. Connell in his work Gender and Power: Society, the person, and sexual politics (1987), the empirical chapters roughly follow Connell's three structures of gender relations: labor, power, and cathexis. Connell comes to identify these three categories as the *main* structures necessary to understand the role of gender in social organization. By this he means that these categories account for most of the related topics in empirical studies and sexual politics, and for most of our current understanding of gender relations. He notes that previous studies on women's subordination identified two different structures of relationship between men and women. The first is the division of labor including the organization of domestic labor; the separation of paid and unpaid work; the division of male and female jobs; and sexual discrimination in the workforce (Connell 1987:96). The second structure is power, which includes "the hierarchies of the state and business, institutional and interpersonal violence, sexual regulation and surveillance, domestic authority and its contestation" (Connell 1987:96). In addition to these two categories, Connell adds

what he terms cathexis.²⁰ This is the realm of emotional relationships. This third structure has to do with “the ways people create emotional links between each other and the daily conduct of emotional relationships” such as “the production of heterosexuality and homosexuality and the relationship between them; with the socially structured antagonisms of gender (woman-hating, man-hating, self-hatred); with trust and distrust, jealousy and solidarity in marriages and other relationships; and with the emotional relationships involved in rearing children” (Connell 1987:97). Following Connell’s framework, this dissertation examines each of these three structures of gender relations through the conservation program’s effect on the natural-resource-based division of labor and gendered labor patterns including the shift of women’s unpaid to paid work; issues of power in women’s program participation, organization, and civic engagement; and the cohesion within the family unit. In addition, one aspect of gender relations not explicitly named in Connell’s framework, though it could possibly be subsumed within cathexis, is the internalization of gender, its effect on the psyche and one’s self-image. This component, though not an explicit focus of any one of the empirical chapters, also arises throughout.

It is critical to point out that Connell acknowledges crossover between the categories he cites as structures of gender relations; however, his presentation of the three is fairly even-handed. That is, he seems to give more or less equal weight to each of the three categories as critical aspects of gender relations. However, my view differs in this regard. I see power as a more basic, fundamental, and broad-reaching element than the other two. The relations between men and women that revolve around both labor and emotion are imbued with the effects of power negotiations. Connell, for example, states that the structure of emotional attachments presupposes

²⁰ A term he draws from, though uses somewhat differently than, Freud (Connell 1987:112).

(sexual) difference—difference in heterosexual couples that is “specifically unequal” (1987:113). Here we see that though he is describing cathexis, the structure of emotional attachments, his point is that the observed difference is one of varying degrees of power. Certainly, the allocation of unpaid, reproductive and domestic work to women and paid, productive work to men is reproduced by and continues to reproduce power inequities between genders. Viewing power as more fundamental to the construction of gender relations, I devote more discussion to this category than the others in the rest of this chapter.

Power

This study also reveals some important consequences of altering the balance of power between genders, demonstrating that though environmental protection and social justice, including gender equality, may be goals within the current sustainable development paradigm, altering gender relations has serious repercussions for how people interact with nature and numerous social institutions. Changing gender relations has consequences for the gender division of labor, for how households and families function, for the local economy, for political engagement, for the future prospects of adults of both sexes and even more so for upcoming generations. Changing the gender balance of power and traditional social norms can be so disruptive to these various institutions that I suggest the reverberating effects may even have bearing on the long-term viability of the Reserve and its communities. In order to understand how this can be the case, and indeed how gender equality can be achieved through the empowerment of women, we need to understand the crucial foundation of gender relations: power. Our understanding of empowerment depends on how we define power.

Most fundamentally, power is a relationship between individuals or groups. It is not an attribute of an individual or group, but something that occurs between them in an exchange. Power only exists in the relation of one individual or group to another. Though the language varies, both Max Weber (Murphy 1978) and Michel Foucault (Rabinow and Rose 2003),²¹ two social theorists often associated with the concept of power, clearly point to the centrality of the *relationship* when defining power. In the English language the word *power* is usually used as a noun, which obscures the notion of *relationship*, but Wrong (1980) points out that words such as *influence* or *control* are more commonly used in their verb forms, making the idea of action and interchange within a relationship easier to grasp. When one refers to a *power relationship*, one is referring to a particular aspect of a more general social relationship.²² Power relationships can be discussed as a unique type of relationship, but I argue that power is inherent in all social relationships. In the case of gender relations, power is a relationship based on gender difference. Power is reciprocal (except perhaps in the case of force). A acts on B. B reacts to A (determining their behavior) based on A's action and B's anticipation of A's future action. Dennis Wrong (1980:10) states that reciprocity of influence is a "definitional characteristic of any social relation." Reciprocity is also a key concept in Foucault's definition of power relations. He states, "Two elements that are indispensable if it is really to be a power relationship: that 'the other' (the one over whom power is exercised) is recognized and maintained to the very end as a subject who acts; and that, faced with a relationship of

²¹ " . . . what characterizes the power we are analyzing is that it brings into play relations between individuals (or between groups) . . . The term 'power' designates relationships between 'partners' . . ." (Foucault 2003).

²² "A social relationship' may be said to exist when several people reciprocally adjust their behavior to each other with respect to the meaning which they give to it and when this reciprocal adjustment determines the form which it takes" (Weber as cited in Murphy 1988:30).

power, a whole field of responses, reactions, results, and possible inventions may open up. He continues, “[power] is a set of actions on possible actions; it incites, it induces, it seduces, it makes easier or more difficult; it releases or contrives, makes more probable or less; in the extreme, it constrains or forbids absolutely, but it is always a way of acting upon one or more acting subjects by virtue of their acting or being capable of action. A set of actions upon other actions” (2003:138).

Power is also asymmetrical. If it’s not, there is no power; i.e., if the probability of one party to exert their will is equal to that of the other party, there is no power at play (Blau as cited in Wrong 1980:10). In the case of gender relations in this study, asymmetry is evident in the hierarchical structure of gender, where power is concentrated with males at the top of the hierarchy.

To more fully unpack the concept of power, I use Joanna Rowlands’ four-part typology because it captures the way in which power relations are enacted on institutional, social-relational, and individual levels. In addition to the traditional, Weberian sense of power, which Rowlands refers to as *power over*, she also divides power into three other types: *power to*, *power with*, and *power within* (Townsend et al. 1999). This is what I refer to as self-empowerment and will describe more fully below.

Power Over

This is the most overt type of power. *Power over* is an asymmetrical social relationship that is characterized by the power holder exerting their will even if there is resistance by the power subject. This concept of power is based on the definition asserted by Max Weber.²³ I choose this definition because it captures the essence of

²³ “We understand by ‘power’ the chance of a man or a number of men to realize their own will in a social action even against the resistance of others who are participating in the action” (Weber 1978:926 as cited in Murphy 1988:132).

power in its most fundamental sense. The various manifestations of power,²⁴ though requiring more elaboration to be fully understood, are subsumed within this broad definition. Lukes states (1974:26) “the absolutely basic common core to, or primitive notion lying behind, all talk of power is the notion that A in some way affects B.” However, the manner of affecting and the factors determining this manner can vary widely, as the scope of social (power) relations is broad. The important characteristics of *power over* are as follows.

The will of the power holder can be conscious or unconscious. Power can be exerted in the realm of political decision-making through the active assertion of interests, or it can also be asserted through the domination of that domain, as when A (typically as a group in this case, such as an elite class) keeps certain issues out of the political discussion (i.e., interests which may be to the benefit of the power subjects). This second example of power, where issues are suppressed, can be either conscious or unconscious on the part of the ruling group. The elite may not even be aware specifically of what issues the dominant system (that works to their advantage) is suppressing. Lukes (1974:22) states, “the bias of the system is not sustained simply by a series of individually chosen acts but also, most importantly, by the socially structured and culturally patterned behaviour of groups, and practices of institutions, which may indeed be manifested by individuals’ *inaction*” (emphasis mine).

²⁴ Bachrach and Baratz’s typology of power as cited in Lukes (1974):

Coercion: Compliance is secured through the threat of sanction. Here there is a conflict of values, or interests between A and B.

Influence: A secures the compliance of B without threat of sanction.

Authority: A secures B’s compliance because B recognizes that A’s command is reasonable. In this case, there is no conflict of values and A complies with B based on a shared set of values.

Force: A secures B’s compliance by removing A’s choice between compliance and noncompliance.

Manipulation: This is asserted as a sub-category of force where A secures B’s compliance because B is not aware of the source or possibly even the nature of demand that is placed on him but is compelled to comply due to this lack of knowledge.

Individual men do not have to consciously draw on gender advantage to exert power, as can be seen in the case of the “motherhood penalty,” where women who reveal their motherhood status while interviewing for a job have been shown to be penalized in the evaluation of their competence and recommended starting salary in relation to both females who are not parents and male counterparts who are fathers (Correll et al. 2007).

A power relationship can be direct or indirect. Such relationships can occur directly between two individuals (or groups) such as a husband and a wife, a boss and subordinate, an elected official and her constituents, or two vying special interest groups. The power relationship can also be indirect, such as in the case of the upper class, whose power is based on economic domination. Lukes (1974) states that control of the political agenda, the ability to suppress certain issues from becoming public issues, is a function of “collective forces and social arrangements,” not of individuals exerting their will. This is still power, but of a more diffuse nature, in which power holders can be more or less conscious of the effective machinations of the power process. “To the extent that a person or group—consciously or unconsciously—creates or reinforces barriers to the public airing of policy conflicts, that person or group has power” (Lukes 1974:8).

It can be manifest or latent. Manifest power is seen when A exerts their will through action (such as imposing sanctions on B, or structuring the economic system in such a way as to limit the options that B may have), but latent power can also be exerted when the power subject changes their behavior based solely on their perception of A’s *capacity* to control. Weber begins his definition with the notion of ‘chance’ or the *possibility* that A (or the power holder) will exert their will. This refers to the distinction between latent and manifest power. In this view, power depends not on A *actually* exerting their will over B (the power subject) but only on the *ability* of

A to do so. Power can manifest in various forms (such as in Bachrach and Baratz's typology: coercion, influence, authority, force, manipulation) but it does not have to manifest to be real. Latent power refers to the control that is obtained through B's awareness that A has the capacity to exert their will over them—and B's subsequent reaction to that knowledge. B must be convinced of the power holder's capacity to control him in order for him to modify his behavior (except in the case of force, where B's perception of A's capacity is irrelevant in comparison to A's actual capacity to act). Latent power can be seen in the example where political subjects obey the rule of law of their own accord. Sanctions don't actually need to be enforced to obtain compliance—only the threat of potential sanction and the perception that it can be executed is necessary. In this case, the case of coercion, power is the balance between the objective capacity of the power holder to act (even against the resistance of others) and the subjective assessment by the power object of the probability that the power holder will, in fact, act or control him. This idea is actually subsumed within Weber's more general definition. This definition of coercive power references the action of both parties within the relationship and emphasizes not only the potential for resistance on the part of the power subject but also the factor that determines potential resistance: their perception of the probability that the power holder will act.

Power must be able to overcome resistance. Weber's definition of power uses the critical word *even* when referring to resistance. He does not state that resistance is a necessary component of the power relationship but that in the case of resistance, the power holder must be able to overcome it in order to exert their will. Authority is the example of power, based on legitimized (consensual) shared values, where the power holder is not met with resistance but instead the power objects submit to the will of the power holder because they have chosen to do so. This is the basis for democratic government. In the cases where A is met with resistance, it is necessary that they

overcome it in order to maintain power. If A couldn't overcome resistance if it were to arise, they would not actually have power to exert their will. This does not mean that resistance must be present or that all power (outside authority) implies oppressive domination. Being able to exert one's will does not infer inherent oppression, because power is not only the means to exert one's will but is also the means to restrict, escape, overthrow, or dissolve the will of someone else. Power relations include both exertion of will *and* resistance to the other party's will. For example, a Mexican woman who has the power to resist her husband's command to stay in the house instead of visiting her mother is not being oppressive in exerting her will. She is resisting her husband's will to keep her home while exerting her own will to leave. If she is successful in going, her power has dominated his, but this does not imply oppression. This example demonstrates the critical nature of understanding *power over* when defining empowerment and considering how gender relations are altered. In numerous instances, women's agency has historically been constrained by patriarchal institutions such as the church, state, family, marriage, and many more. Historically, women have been expected, even commanded, to live within socially defined boundaries, to *do* certain things and *not do* others. Men, in these cases, wield power over women when women comply. However, as women become empowered and question the status quo, they resist men's *power over* with their own. In the example above, the woman who succeeded in leaving her home despite resistance of her husband was wielding her *power over* as she realized her own will to leave. It is worth restating that this use of *power over* does not imply oppression and illustrates that *power over* is not necessarily oppressive. The various types of power are tightly interwoven and mutually reinforcing. Women's own *power over* to resist the will of others is made possible through the increased *power within*, *power to*, and *power with* that will be discussed below as components of self-empowerment.

Last, *power over* does not necessitate overt conflict. Power relations are about the pursuit of interests that can take many forms such as the desire to do less, or a certain type of work, to have access to certain resources, to have voice in decision-making, etc. Often power is evoked in situations of conflict of subjective interests. In such cases, power is met with resistance. But this raises the question of defining interest. Interest can be either conscious or unconscious. Both wants and grievances can be (and are) molded by the structures within which they are embedded. Lukes (1974:23) asserts that conflict is not an essential component to power relations but that most effective means of exercising power is to prevent conflict from arising. He writes:

‘A’ may exercise power over ‘B’ by getting him to do what he does not want to do, but he also exercises power over him by influencing, shaping or determining his very wants . . . Is it not the supreme and most insidious exercise of power to prevent people, to whatever degree, from having grievances by shaping their perceptions, cognitions and preferences in such a way that they accept their role in the existing order of things, either because they can see or imagine no alternative to it, or because they see it as naturalized and unchangeable, or because they value it as divinely ordained and beneficial? . . . Indeed is it not the supreme exercise of power to get another or others to have the desires you want them to have—that is, to secure their compliance by controlling their thoughts and desires?

His point is well taken that the manifestation of conflict can be avoided by controlling the desires and grievances of power objects, but that does not eliminate the existence of their real interests or of a fundamental, though subverted, conflict in interest between the parties. We can see *power over* manifest through internalized gender identities and norms that define men and women as essentially different. Risman (2004:432) states, “As long as women and men see themselves as different kinds of people, then women will be unlikely to compare their life options to those of men. Therein lies the power of gender.” Townsend et al. (1999) give an example of this subversion of overt conflict relevant to gender relations. They describe how rural,

Mexican women have been socialized to accept domestic isolation as natural, where they must receive their husband's permission to go out. In adopting this worldview as natural, the women contribute to their own oppression. "To them, this is disagreeable but natural, like a cold, wet day against which rebellion is irrelevant" (Townsend et al. 1999:30). This naturalized oppression is also metaphorically described by Bem (1998), as akin to a fish who knows nothing else but its natural, watery milieu. The fish does not know that its environment is wet as it does not know any other option. Before gains in power can be made, first women must become aware of other options, other potential realities and social milieus. First, they must gain the capacity to see beyond their immediate, practical constraints to the deeper, structural constraints that impinge on their options.

Self-Empowerment: Power Within, Power To, and Power With

Self-empowerment is a necessary prerequisite to conscious forms of social power. Critical to the discussion within this dissertation is the idea that empowerment comes from within. Townsend et al. (1999) argue that people cannot be empowered by others and that one cannot *give* power. If one can give it, one can also take it away. Power must be taken for oneself. More accurately, to discuss it in terms of a relationship, in order to *have* power, it must be the power holder who exerts their will executed through their own force. This process can be enabled and encouraged by others, but the capacity to exert one's will cannot be granted by anyone other than oneself. For this reason, Townsend et al. argue that empowerment doesn't exist, only self-empowerment. Though this aspect of power is not explicitly dealt with in Weber's definition (nor does it fall into the typology of power referenced in this section), I see self-empowerment as a prerequisite to Weber's power, or "power over," in its *consciously* executed forms. That is, in order for one to consciously have the capacity

to exert one's will, one must *believe* oneself to have this capacity, or to be *conscious* of it. This can be seen in cases where the potential power holder's capacity is limited not by material or other structural constraints but by their own inner values or lack of confidence. For example, women and children may be taught (and subsequently come to internalize) that they are not fit to make decisions for themselves regarding finances, economic endeavors, marriage partners, etc. It is not an *actual* lack of capacity that constrains their power in this case, but their *perceived* lack of it. Self-empowerment is necessary before conscious forms of social power can be exercised.

Power within refers to assets such as self-esteem and confidence which are used to overcome fear, blame, guilt, and other psychological and emotional barriers. This is a critical component of self-empowerment. All three of the empirical chapters within this dissertation touch on the importance of facilitating the growth of *power within*, particularly for women residents of the Reserve. In Chapter 4 (the division of labor) and Chapter 6 (family organization), we see how women's introduction to new forms of production (e.g., using seeds to make jewelry for tourists), their increased involvement in the cash economy, and subsequent increased income leads to greater self-esteem, confidence, mobility, and autonomy, i.e., *expanded agency*. In Chapter 5 (women's participation and leadership), we see this increase in agency as well, through a different mechanism where women organize and take on leadership roles in civic engagement.

In addition to *power within*, and as evidenced in the approaches of many projects with women's empowerment as a goal, I view both *power to* and *power with* as critical components of self-empowerment. Mosedale (2005) describes *power to* as "power which increases the boundaries of what is achievable for one person without necessarily tightening the boundaries of what is achievable for another party." This expands the capabilities of a person without necessarily detracting from the ability of

what someone else can do, such as in the case of skills training. Mosedale (2005) uses the example of a person learning to read. Empowerment projects inevitably include capacity-building initiatives, whether related to education, health, skills training, or something else. All three of the empirical chapters touch on the empowering effects of capacity-building, whether political, personal, or professional. Clearly, local capacity-building is an integral part of the Mamirauá project which evidences strong effects on gender relations.

Last, *power with* is also a key component of empowerment efforts. This is the strength gained through collective action, organization, collaboration, and mentoring. With this type of power, a person's ability to realize their goals is increased due to the pooling of resources and social ties they build with others. Chapter 5 demonstrates the potency of *power with* as the women who take the most active community and leadership roles harness and benefit from the opportunities produced through the creation of female political space, collaborative projects, interaction with role models, and accompanying new ideologies.

In the empirical chapters that follow, these four aspects of power will be observed as women contend with, at times accepting and other times contesting, the material and social constraints generated through the structure of gender relations. Paralleling the argument that local participation is critical to the achievement of both social justice and project efficacy, so too is the argument for women's empowerment justified on grounds of both social justice and efficacy.

Typically, development efforts to empower women have been based on the supposition of women's powerlessness (Sholkamy 2008). In other words, in order to justify empowerment, women must first be perceived as powerless. Without this powerlessness, the justification for shifting the power balance disappears. Hania Sholkamy (2008), in Gender, Rights, and Development: A Global Sourcebook,

discusses two main justifications of empowerment in the development literature. The first is a functionalist approach where women's oppression is based on an essentialized understanding of male/female cultural and biological difference. Women's powerlessness is based in their reproductive and sexual relations. The goal of development in this school is to promote equality as an end in itself where women's rights are constructed as human rights, worthy of development efforts in their own right. The second is a structural approach that focuses on women's inequality as the underlying cause of social, health, political, and environmental problems. Here, inequality is seen as resulting in overpopulation, systematic health issues, political instability, etc. This approach focuses on empowerment of women as a strategic means to other ends such as efficiency of projects, improved health, population control, political stability, and environmental health. Despite the differing justifications, women's empowerment has garnered widespread support within development, and increasingly, as social justice objectives have become integrated into conservation goals, so too has women's empowerment.

This dissertation argues that participatory conservation has the potential to both transform and reproduce gender relations, a specific type of power relation. In this next section, I focus on the transformation side of this duality, as measured by the concept of *empowerment*. Efforts at women's empowerment, whether intentionally or unintentionally, have the potential to, and at times do, alter gender relations. Therefore, empowerment can be seen as a mechanism of change. Numerous definitions of empowerment have been utilized in the development literature.²⁵ Though there is variation in how the term is applied, there is general consensus that empowerment is a *process* where the disempowered move toward a more powerful

²⁵ See Molhotra et al. (2002) for a review; also Townsend et al. (1999); Mosedale (2005); Kabeer (2001); Sharp et al. (2003); Sholkamy (2008); Ibrahim and Alkire (2007); and Sen (1985b).

state. Starting at this point, I draw on Townsend and her co-authors' (1999) understanding of empowerment as *self-empowerment*. They argue that people can be enabled but that power cannot be given to others. Following Molhotra et al. (2002), I use Kabeer's definition of empowerment (2001) as it incorporates the fundamental aspects of various concepts used in the empowerment. Furthermore, I refer to Sen's (1985b) view of agency as essential to the definition of empowerment.

As informed by Kabeer (2001) and Sen (1985b), I view empowerment as the process of removing constraints and broadening possibilities. That is to say, empowerment is the process of increasing choice and expanding agency, or the ability to realize the desired outcomes of those choices. To Kabeer, empowerment is "the expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them" (2001:19). Kabeer further defines empowerment as the ability to make choices through the interconnected domains of resources, agency, and achievements. Resources, which can be material, social, or human, create the context within which choices are made. Agency is the ability to define goals and realize them.²⁶ Achievements are the outcomes of these efforts. These three dimensions of empowerment interweave and interact with one another. Generally speaking, the greater one's access to resources, the greater one's agency will be. And new achievements often alter the context within which resources are acquired such as in the case of increased possibility of higher earnings upon conferral of a degree. Empowerment not only includes an expansion in access to resources but also involves change in the terms under which resources are obtained, providing for greater dignity through the way in which the resources were acquired. In this view, resources are enabling conditions to empowerment; achievements are its outcome; and

²⁶ Sen (1985b:203) defines agency as "what a person is free to do and achieve in pursuit of whatever goals or values he or she regards as important."

agency is at its heart. That is to say, empowerment is not welfare, where resources are simply provided to women in need, but hinges on the active involvement of those women in the process of accessing resources, defining goals, and realizing the chosen outcomes. This expanded agency as the core empowerment involves the generation of an internalized sense of increased power: the belief not only that one can define goals but that one can realize them. In order for this to occur, women need to overcome the type of insidious power referred to by Lukes (1974) where their desires, expectations, and grievances are shaped by the structures within which they are enmeshed. This points to the potential of outsiders to facilitate the expansion of agency through influencing internalized views which act as barriers. Interventions cannot give women power but they can remove constraints in some cases, or at least alter the structural context and internalized perceptions of what is believed possible. That said, empowerment cannot be bestowed on people from the outside. Ultimately, empowerment is only possible when women critique their own conditions and decide to engage in the process of change where the benefits to change in their own minds outweigh the status quo.

In their review of women's empowerment literature, Malhotra et al. (2002) listed a number of different operational definitions that describe different aspects of empowerment including women's autonomy, agency, status, land rights, domestic economic power, bargaining and decision-making power, and public participation. Taking these various definitions into account, Shalkamy (2008:88) concludes that despite these various views, "there is broad agreement that women's empowerment necessitates systemic transformations in the structures of patriarchy." One critique raised by Shalkamy (2008) is that development projects designed to empower women routinely suffer from the fundamental failing that they are too small-scale to have a significant impact on structures of male dominance. She asks whether "some women

can be empowered at the micro level without addressing systemic constraints and oppression?” and, if not, “how does one approach such revolutionary projects? How can research and projects and programmes transform the structures of patriarchy which are ingrained in policies, economies, markets, homes, psyches, sexual and social relationships?” (Shalkamy 2008:88). I respond to that by answering that they do *in part*. Incompletely. Inconsistently, in tiny bits, over time, through the myriad daily recursive actions of agents interacting with the multitude of structures inside and around them as they at times repeat and reinforce those structures and, at other times, resist and transform aspects of them. Shalkamy (2008) states that development projects, and in particular women’s empowerment projects, are too small-scale to significantly impact structures of male dominance, but by drawing on the work of Giddens, I argue that that is not the case. Giddens theorizes that structural change occurs through repetitive, recursive interaction between agents and structures. In Mamirauá, we see this happen as women’s participation in programs impacts and alters the various structures that shape the social context of their lives. This dissertation shows ways in which the gender relations embedded in and composed of political organization, economies, markets, households, families, and psyches are altered, within limitations, by the introduction of a conservation program.

Gender Structure: Individual, Social-Relational, Institutional Levels

The Western gender system is composed of hierarchical power relationships. In order to understand the extent to which women are empowered by an external force, such as a conservation project, we first need to understand how the gender system constrains and enables actors. To do that we must unpack what is meant by gender as a structure. How we define gender and understand the ways in which it enables and constrains

men and women differently determines what empowerment and equality might look like.

There has been an evolution in the way gender is conceptualized. Early gender scholars focused on individualistic models. They viewed gender as an individual characteristic and were concerned with identifying sex differences, how individual sex/gender difference originates, whether through biological or social means (Bem 1993), and how difference influences behavior. Gender was viewed as a set of categories imbued with cultural meanings that society associates with biological sex differences. In this view, *sex* refers to the biological differences between men and women, while *gender* signifies the social meanings attached to that category. Though this distinction between gender and sex is still useful, gender scholars no longer see gender as an individual attribute but rather as a hierarchical stratification system used to distribute power and resources involving not only individual identities and roles but also performances, cultural beliefs, social-relational contexts, interactions, and institutions—a complex social structure—or pattern of social relations constructed on individual, relational, and institutional levels. Whether it is viewed from a cultural perspective or through a structural lens, gender scholarship has come a long way. Gender is no longer viewed as something we *have* as individuals but as a system we live within—and yet one that also lives within us.

As gender theorists have moved beyond defining gender to investigating how it is created, reproduced, and transformed, a number of traditions have developed. One theoretical perspective on gender focuses on the creation of gender through interaction and the relation of one group to another. A concept that has won widespread acceptance is the idea that gender is relational:

Gender is not just women. Gender is both women and men, both femininity and masculinity. It is also the relations between them and all the people and practices that do not fit neatly into these dichotomized categories. Gender is,

moreover, the social relations that construct masculinity and femininity as exhaustive and mutually exclusive categories, that see men and the masculine as universal and normative and cast women and the feminine as peripheral or deviant, and that portray anatomy as destiny. (Brush 2003: 44)

This tradition emphasizes the importance of social context and how the performance of gender roles reproduces difference and gender stratification. Another view focuses on the power of social structure to systematically constrain certain types of people while enabling others through the unequal distribution of power, privilege, and resources and through the construction of ideological discourse that manifests in values and gender norms justifying this unequal distribution.

More recently, a growing number of theorists have been working with more integrated conceptualizations of gender. Following this approach (in keeping with Lorber 1994; Risman 1998, 2004; England and Browne 1992; and Connell 2002), I argue that our sense of gendered self is informed through socialization and lifelong learning (internalization); it is a process of maintaining difference as we act in relation to others in social contexts (interaction); and it is a system of stratification we live within (structure). Gender is created not only through all of these processes and structures but also through their tightly interwoven nature. That is, each of these facets construct gender as they influence and inform the others.

How Is Gender Structure Transformed?

Internalization

England and Browne (1992) argue convincingly that despite interactional and structural conceptualizations of gender eclipsing models focused on the individual level, most gender theories at least imply a role for internalization. Internalization means that “individuals carry normative values, preferences, cognitive beliefs, or behavioral proclivities across situations” (England and Browne 1992:99). They assert

two critical features of the internalized state: first, that proclivities are “carried on the person,” i.e., they are not external, and second, that these proclivities are constant across situations, despite variation in external constraints. They also argue that both internalization and “contemporaneous external constraints” play a role in creating and reproducing women’s subordination. In fact, they argued that though many theories explicitly weight one of these processes over, or to the exclusion of, the other, “any coherent and plausible theory of women’s subordination needs to posit a role for both of these factors” (England and Brown 1992: 99). Through examining a number of theories that range from micro to macro levels of analysis, including behaviorism, exchange theory, ethnomethodology, Chodorow’s psychoanalytic sociology, social structure and personality perspective, and, last, Marxist feminism, socialist feminism, and materialist versions of radical feminism, they argue that “external constraints combine with internalized predilections to maintain subordination . . .” (England and Browne 1992:97). They conclude that though various theories might posit a greater need for approaching the problem of women’s subordination on one front versus the other, they all have implicitly, if not explicitly, acknowledged a role for both factors.

Internalization may not be the only or even the primary process through which gender is constructed, but I concur that it is a factor. This is the case of the fish who does not realize its watery environment is wet and is not even aware that other beings might experience alternate environments. This is the case of the teenage girl who does not apply to an engineering program because she believes she is bad at math when her math scores are commensurate with those of her male peers. This is the case of the peasant woman who does not go out of the house when told to stay home by her husband because she knows no other way of relating to a spouse but compliance. And this is the case of the Amazonian *Coboclo* woman from Mamirauá who, with the exception of serving drinks, stays silently in the back room when a management agent

visits her home. She leaves her husband to speak because she does not imagine herself the type of person who speaks to outsiders. Men do that. As Bem (1998) states, which notably was directed at American women who are generally far more advantaged than those of Amazonia, “alternative beliefs and attitudes about women have gone unimagined.”

If internalization is a mechanism of reproducing subordination through limiting what women believe is possible and even limiting their awareness of potential alternative ways of being, then the corresponding mechanism of change is raising gender consciousness, self-esteem, confidence, and instrumental capability. The ability to imagine alternative relations of power is a necessary—though not sufficient—condition to agency.²⁷ In Mamirauá, I look to understand how women’s involvement in organized, productive groups, entrance into wage labor, and participation in political organization, instrumental skilling and leadership training, leadership roles, and introduction to role models and outsider perspectives alters gender consciousness, self-image, and instrumental capability.

Interaction

Another perspective on the construction of gender that has received substantial treatment focuses on the process of interaction as men and women act out their gender. In 1987, West and Zimmerman argued in their seminal article that gender is a process, something that we do. They focus on how social interaction and response to expectations lead to unequal positions in a social hierarchy. Through wearing certain clothes, engaging in particular tasks while eschewing others, adopting gender-specific mannerisms, etc., we perform gender, and thus make it real. Likewise, Judith Butler

²⁷ See Sullivan (2004) for a discussion of gender consciousness.

argued in her influential book Gender Trouble (1990) that gender is constructed through performance. She describes how certain behaviors such as the clothes we wear or the way we interact with the opposite sex are labeled as masculine or feminine. As these behaviors are enacted, the actor acquires masculinity or femininity. In so doing, the performance re-enforces the social facts society asserts as truths. In Risman's effort to conceptualize gender as a structure in its own right, she also argues that interaction plays an important role in how gender is maintained. She writes, “. . . gender structure endures in families not only or even primarily because we socialize children for compliance, but because we organize the interactional contexts so that doing gender is usually the easiest means to thrive, or even survive, in our society” (Risman 1998:10). Here we see Risman's integrationist approach to conceptualizing gender structure, a point that will be discussed further shortly, but this quote draws attention to the important role of doing gender. She asserts that well-being and even survival can depend on performing gender normatively.²⁸

This conceptualization of gender as an interactional process sparked a long line of intellectual debate about the attributes of gender, how it is formed, and whether gender can be undone. In her ethnography set in Mexican *maquiladoras*, Salzinger (2003) suggests how gender is created through interaction when she asserts that femininity is produced by interpellation where “a subject is created through recognizing herself in another's naming.” Gendered traits are not inherent but are adopted through enforced suggestion. When these expected behaviors are performed, they are rewarded. When they are not, the actor is sanctioned. Through the suggestion that to be a woman means the expression of particular traits, a person learns what it is

²⁸ This is not due to some essential, natural order, but, Risman argues, performing gender is so crucial to well-being because we have *organized* interactional contexts to achieve that result—which leads into her integrationist argument.

to be a woman in that environment. The naming of the self by another, referring to qualities as if they were inherent, *creates* the very subject named.

Another example of this theoretical conceptualization is offered by Susan Gal (1991), who claims that gender relations are created not only by the sexual division of labor and a set of symbolic images, but also through differential possibilities of expression. The power differential that may be established and maintained is done so in part by the assertion of men's freedom to express themselves comfortably among one another and, in doing so, claim dominion over public space. Gal documents that women in a Mexican village use a more interactional strategy where they use more polite speech than do men. In this case, women couch their demands and criticisms in irony (where meaning is inferred, which allows the receiver to ignore the intent if desired). Her research found that women also use more linguistic particles than do men. Women use more particles that emphasize solidarity with the listener as well as particles that avoid imposition by stressing the listener's autonomy. Gal claims this is "an accommodation arising from their social and even physical vulnerability to men, and the consequent necessity to show deference to men, on the one hand, and maintain strong networks of solidarity with women, on the other hand."

This ideational approach, which emphasizes the power of culture, contributes to our understanding of how gender is created, reproduced, and potentially altered, through centering its focus on interaction and the agency of individual actors. This view directs me to examine the construction of the subjective gendered self through internalization and interaction and provides insight into perceptions regarding acceptable gender roles, status, autonomy, mobility, and self-esteem. This theoretical conception of gender is useful, but it is incomplete without also accounting for structure.

Structure

More recently, gender scholars including Barbara Risman (2004), Patricia Yancey Martin (2004), Cecilia Ridgeway (2009), and Shelley Correll (Ridgeway and Correll 2004) are taking a more structuralist view of gender, but not to the exclusion of internalization and interaction. These authors describe gender with some variation in terminology including *social system*, *institution*, and *structure*, but they all emphasize the structural nature of gender. Even earlier, Lorber (1994) described gender as a stratification system based on difference. She argued that in order for humans to justify inequality, difference must be established between groups. She argued that gender difference is socially constructed but that it is used universally as a justification for subordinating women. Risman, who builds on this tradition, sees the very essence of gender inequality in the social creation of difference.

Structure is one of the foundational concepts in sociology, yet there is a lack of shared definition of the term. In structural models, society is described as an architectural metaphor where the operational concepts revolve around the collective constraint reflected in “foundations,” “walls,” and “glass ceilings,” as opposed to dramaturgical models that emphasize actors playing out roles in a theatrical drama (Brush 2003). George Marshall in The Oxford Dictionary of Sociology states that “Structure is generally agreed to be one of the most important but also most elusive concepts in the social sciences” (Marshall 1998:649). He attempts to capture the meaning by defining structure as “a term loosely applied to any recurring pattern of social behavior; or, more specifically, to the ordered interrelationships between the different elements of a social system or society” (Marshall 1998:648). The examples he offers include institutions such as kinship, religion, economy, and polity as well as norms, values, and social roles. Blau (1977) focused on structure as constraint imposed on the individual by the collectivity and was opposed to conceptualizing

structure in the form of internalized norms and values. In his mind, structure was outside the individual. He conceptualized structure as a force in opposition to individual motivation. To Blau, structure is observable, external, and independent of individual motivation. The effort to capture the essence of structure and elucidate its relationship to human agency has produced a voluminous literature. Despite the lack of consensus, several defining characteristics of structure can be identified. Smelser (1988) pointed to two common themes generally accepted by structuralists: first, that structures exist outside individual desires, and second, that structure, to at least some degree, explains human action.

Advocating an Integrative Approach: Gender Structure Theory

As mentioned previously, various gender scholars are now taking a more structural approach to theorizing gender but one that integrates both internalization and interaction. Lisa Brush (2003:44) views gender as an integration of individually adopted characteristics, social interaction, and structure. She acknowledges the power of socially designated traits of masculinity and femininity; however, in moving beyond the simplistic definition that gender is the socially constructed categories that correspond with the male and female sexes, she states that “gender is not something you *have* . . . Gender is something you *do* . . .”

The gender regimen—for example, the body disciplines of walking, talking, dressing, and gesturing like a lady or a real man (or dealing with the confusing and sometimes dangerous consequences if you do not)—is enforced and enacted both in solitude and in small and large groups, and is fundamentally interactive. You get to be a competent, acceptable, or rebellious woman or man through practice and habitual response to feed-back from other people. (Brush 2003:44)

This view is in keeping with Judith Butler’s idea of “performativity” (1990) and West and Zimmerman’s “doing gender” (1987). When Brush (2003:44) states that

gender is something that you do, she then goes on to say that “it is also more than that.” The something more is the structural component of gender. She quotes Hess and Ferree, who in 1987 explicitly asserted the primacy of structure. They state that gender is “not a trait but a system for dividing people into distinct, nonoverlapping categories despite their natural variability . . . [It is] relational rather than essential, structural rather than individual” (Hess and Ferree 1987:16). Risman (2004) also argues for an integrative approach. While she sees structure as greatly responsible for creating and maintaining gender inequality, her more recent work takes an integrative approach which includes a place for individual agency, the influence of interaction, as well as the power of institutional constraint. She sees gender as deeply embedded in society within our personalities, our cultural rules, and our institutions. Risman (2004) argues that “gender structure differentiates opportunities and constraints based on sex category and thus has consequences on three dimensions: (1) at the individual level, for the development of gendered selves; (2) during interaction as men and women face different cultural expectations even when they fill identical structural positions; and (3) in institutional domains where explicit regulations regarding resource distribution and material goods are gender specific.” In the tradition of Giddens (1984), she suggests a theory of gender as structure that views causality as recursive. Following the defining concept of structuration theory where structure and agency are mutually constitutive, I argue that it is on these three different levels of internalization, interaction, and institutions that we need to look for how agents alter gender structure and how alterations in structure can produce changes at the interactional and individual levels.

The idea of a dialectic relationship between structure and agency predated Giddens’ structuration theory. Social constructionism, in contrast to essentialism, is based on the idea that society is actively created by humans and that humans are

shaped by society. This dialectical process creates an objective reality but one that is the product of social interaction. Berger states, “Society is a dialectic phenomenon in that it is a human product, and nothing but a human product, that yet continuously acts back upon its producer. Society is a product of man. . . . Yet it may also be stated that man is a product of society” (1969:1).

In Conversations with Anthony Giddens, Christopher Pierson (Giddens and Pierson 1998:74) introduces Giddens’ theory of structuration as a resolution to one of the “most ubiquitous and difficult issues in all social theory,” that of the relationship between agency and structure, between “voluntarism and determinism.” In his attempt to build a social theory that addresses the processes of history, Giddens wanted to avoid falling into either subjectivism or objectivism. Objectivism gives too much power to impersonal forces of structure in which the fate of agents is determined by social forces outside their control, while subjectivism gives too much power to the volition of agents, ignoring the constraints of social structure. Giddens combines the subjective and objective within his conception of both structure and agent and places emphasis on the power of recurrent social practices to shape, change, and reproduce social institutions (Giddens and Pierson 1998). To Giddens, agents and structures are mutually constitutive (Giddens 1984). Agents are embedded in social structure and draw on their knowledge of that structure when they act. The extent to which they can realize their objectives is influenced by their ability to capture and apply aspects of those structures. Recursively, structures are also within agents, in their understanding of social norms, sanctions, and hierarchies of power (Stones 2005); therefore, this internalized understanding of the structural context influences what becomes possible. The causal process is determined by both agent and structure in a recursive manner where, as explained by Stones (2005:20), “agents in structural contexts draw on these structures within the context in order to act, and these actions, in turn, work not only to

satisfy, more or less, their own wants and desires, they also reproduce or change the structural context.”

In Giddens’ view, people engage in regular, recurring practices which are shaped by conventions and as they enact these practices again and again, they reproduce the conventions. However, there are instances where change has an opportunity to enter the cycle. Giddens states, “[Social life] is continually contingently reproduced by knowledgeable human agents—that’s what gives it fixity and that’s what also produces change” (Giddens and Pierson 1998:90). To Giddens, social life is “*contingently reproduced*,” by which he acknowledges the potential for unintended consequences of an agent’s actions. As these practices are not necessarily repeated exactly the same way each time, they “rebound on their future actions” (Giddens and Pierson 1998:90).

Like Giddens (1984), Connell (1987) also argued that structure both constrains action and is created by action. He offers an additional insight into the recursive process of agency and structure when he argues that people can also consciously attempt to alter social structures. “Since human action involves free invention . . . and is reflexive, practice can be turned against what constrains it; so structure can deliberately be the object of practice” (Connell 1987:95). In other words, though structure shapes individual action, we can still change structure; in fact, we can do so intentionally. Risman also refers to the interaction of individual and structural levels when she discusses how the maintenance of difference is the foundation upon which inequality rests and that because people internalize this difference and all the accompanying social expectations, they do not even notice inequality. Risman (2004:432) argues that “in a world where sexual anatomy is used to dichotomize human beings into types, the differentiation itself diffuses both claims to and expectations for gender equality. The social structure is not experienced as oppressive

if men and women do not see themselves as similarly situated.” As she states, “therein lies the power of gender.” This is internalization at work. The quote emphasizes the link between structure and internalization in the maintenance of inequality. Risman also connects the individual and structural levels with the interactional, arguing that all three contribute to the maintenance of gender as we know it. She argues that it is the cognitive images created by cultural expectations that maintain inequality when both individuals intend to choose more equitable arrangements and legal structures allow for this. She uses the division of labor within families as an example. In the situation when both husband and wife intend to develop an egalitarian division of labor and laws do nothing to impede this, we still see discrepancy between the type of tasks and the total hours of domestic labor conducted by men and women. Why is this? Risman asserts it is cultural expectations that drive both men and women to make choices that perpetuate hierarchical families. Women are still expected to be nurturer, primary child-care provider, housekeeper, and emotional worker, while men are still expected to bring home a family wage. Women will be socially sanctioned for not keeping a tidy home, not their husbands. If the mother of pre-school-age children chooses to work full time, she may be viewed as a poor mother, while this is not the case of fathers who make this choice. These cognitive images compel people to perpetuate gender inequality as they motivate individuals to choose behaviors that define us as capable and moral (gendered) people—even when we don’t have to.

Conclusion

In this chapter I’ve discussed how gender relations are changed by the transformation of rural agrarian life and how rural life is transformed by changes in gender relations. Whether purposefully or inadvertently, conservation projects promote this change in rural life and thus changes in relations of power between men and women. This is a

recursive process. These changes in power relations between men and women then have reverberating consequences for both social and physical environments, which makes understanding this process important to social scientists, conservationists, project managers, and local people. Gender relations are both reproduced and transformed by the imposition of modern institutions such as the capitalist economy, democratic forms of political representation, and egalitarian ideals of civic engagement. Following an integrationist conceptualization of gender structure, I argue that the processes that drive this cycle occur at individual, social interactional, and institutional levels. And I argue that not only do changes in structure affect what individual agents can do, but individual beliefs and desires, as they unfold in social interaction, in turn reciprocally alter these same structures.

But how does this happen? What are the mechanisms, or levers of change of this process? If internalization is one process by which gendered identities are formed, the change mechanism is raising gender consciousness. This involves creating political space for women's organization and congregation; educating; and providing opportunities to network with outsiders and role models. For interaction, the mechanism is individual resistance to oppressive gender relations and traditional gender-schematic norms of behavior (this is bolstered by increased gender consciousness, increased instrumental skills, increased access to resources such as income produced through wage labor, removal of external constraints such as lack of jobs, inability to travel, lack of child-care or accommodations for mothers in workplaces). For structure, the levers of change are legal policies, political organization, and the creation of political space through congregation, economic opportunities that favor equitable power relations . . . basically the removal of structural constraints and the increase in agency (bolstered by all of the above). Change at this institutional level creates openings for changes in ideological discourse.

For example, Jaumotte (2003) found that female workforce participation in OECD countries positively correlates with more neutral tax treatment of second earners, tax incentives for spouses to share market work, child-care subsidies, and paid parental leave. So, as new policies, such as those instituted through the creation of a protected area, create new labor patterns, the context of social interactions changes; new identities are internalized; cultural beliefs, values, and norms surrounding the gender division of labor evolve.

Generally aligning with Connell's three main structures of gender relations (i.e., labor, power, cathexis, which are all sites of power relations), the empirical chapters of this study investigate how these critical aspects of social life are either reproduced or altered through people's participation in conservation programs. In Chapter 4, I investigate the effects of program participation on labor patterns of natural resource use and the consequences of these changes for gender relations. Here we see changes in structure (e.g., new economic opportunities and political organization) leading to the creation of new cultural expectations and cognitive images (e.g., women engaging in wage labor outside the community) which also result in new internalized identities (e.g., women as workers, family providers, active community members, and leaders of productive associations, travelers, public speakers, etc.). Chapter 5 examines how women's participation and leadership in programs is constrained by existing patriarchal structures and the extent to which the conservation programs expand agency, enabling women in the face of these constraints. This chapter also illustrates social interaction as a mechanism that changes structure where women's social and political organization, as well as the influence of role models and peers, proves fruitful in furthering their own self-empowerment. Last, in Chapter 6 I investigate how structural changes in economic, household-production, and political spheres lead to alterations in family cohesion, altering a social institution which is a

critical locus of the production of gender and the maintenance of inequality. These empirical chapters illustrate the recursive and intertwined nature of internalization, interaction, and structure in the reproduction and transformation of gender.

CHAPTER 4:
**NATURAL RESOURCE USE, DIVISION OF LABOR, AND GENDER
RELATIONS IN THE MAMIRAUÁ SUSTAINABLE DEVELOPMENT
RESERVE**

The sexual division of labor at its simplest is an allocation of particular types of work to particular categories of people. It is a social structure to the extent that this allocation becomes a constraint on further practice.

—R.W. Connell (1987:99) in Gender and Power

Introduction

This dissertation aims to illuminate a number of ways in which the experiences of local residents within a co-managed protected area vary by gender and how their existing social relations are both altered and reinforced by organized programming. I examine how gender structure is transformed in some ways, while reproduced in others, through the introduction of alternative economic initiatives, restrictions on natural resource use, and participation in Reserve management. This chapter focuses on the gender division of labor as a critical site of gender inequality.

Though the economy in Mamirauá is in transition, subsistence activities are still crucial to survival. Access to and control of natural resources remain critical to individual and group well-being. In such societies, the subsistence labor necessary to obtain, process, and use natural resources overlaps substantially with domestic labor. The way in which these types of work are socially allocated has far-reaching consequences for the balance of power between genders. For example, individuals' ability to access market labor and the associated benefits is closely tied to their domestic labor burden.

The gender division of labor is a culturally ubiquitous institution where roles and responsibilities are organized to a great degree by sex. Categories for men's work

and women's work²⁹ exist across cultures. As socially constructed categories, they vary in their content; however, gendered patterns clearly exist, for example, women's primary role as caretakers of household and children. I examine the effect of conservation programming on the division of labor because this primary domestic role profoundly shapes women's lives, the balance of power within their families, and their access to social networks, information, opportunities, and material resources. It is also one of the main constraints to their agency, impinging on their ability to participate in conservation, community development, political, and economic activities, among others. In addition, men and women use the environment in distinct ways, as demonstrated by various studies discussed in Chapter 3. Following Agarwal's view, I argue that this stems primarily from the gender division of labor. I first sought confirmation that distinct gendered natural resource use was the case in this site so as to understand how men and women are affected by conservation initiatives differently. Furthermore, inequality in the domestic gender division of labor is closely tied to inequality in market work (Ridgeway 2011). As such, I assert that changes in the division of labor have the potential to trigger significant shifts in gender relations and social organization within other social institutions.

In this chapter, I investigate three research questions: What is the gender division of labor? How are conservation-related programs changing or reproducing the traditional division of labor? And last, how have gender relations been altered by the new labor patterns? In order to address how gender relations are transformed or reinforced through men and women's participation in conservation-related programs, it was first necessary to document which resources are used and controlled, by whom, and for what purposes. I expected that men's and women's responsibilities and

²⁹ In addition to other gendered groups in some societies.

resource use would show variation along traditional gender lines. If this were the case then initiatives to organize new natural-resource-based economic activities would affect men and women differently. I then identify how program participation impacts men and women differently and how these changes affect the power dynamic between them.

It is also important to understand how men and women might be affected differently by restrictions on resource use. If gender norms dictate that certain responsibilities fall to men and others to women, then, I hypothesized, restrictions on resources used in these domains should have differential impacts on men and women. For example, as men are mainly responsible for providing food for the family, then restrictions on fishing, the most critical of all economic activities in this region, would more directly affect men. That is not to say that women would not also be affected, as they are also end users of the resource provided by their husbands and other male kin, but the ways in which men and women interact with the regulations would be different. Men, for example, are more likely to be confronted by enforcement officers who demand to check the legality of the fish catch while they are out on the water fishing.

In addition, I also wanted to understand how political participation in a co-managed reserve varies by gender—to what extent the gender division of labor, and gender relations more broadly, affect men's and women's involvement in and decision-making about resource management. Do women, for example, have equal access to management decisions made within the Reserve? Given their level of participation, I wondered whether women's gendered responsibilities would affect their interests and decisions. From the outset of this study, a number of significant changes in labor patterns were clearly evident, such as women entering into wage labor and working outside of their communities for extended periods. In addition to

documenting these changes, I also wanted to know whether the changes in traditional labor patterns affect how men and women relate to one another in other domains such as family and community organization.

To address these questions, I used Gendered Resource Mapping (Rocheleau 1995), species-specific resource lists, in-depth interviews, archival research, and field observations. The details of the methodology are discussed in Chapter 2. From the species-specific list I was able to create a chart (Figure 4) showing differences in men's and women's knowledge and use of natural resources. After asking groups of men and women to generate a list of all species, plant and animal, that they use for subsistence and commercial purposes, a number of differences in both knowledge and labor domain became clear. First, the number and types of categories chosen by each gender are telling. The informants were asked to think about what resources they gather from the forest, rivers, lakes, and any other natural environments they utilize. The categories of resource were generated by the informants themselves. The men, for example, offered a list for *isca para pescar*, or fish bait. The women did not mention this category at all. I did my best not to prompt the creation of categories, as I wanted to learn which resources would be most prominent in the informants' minds. However, if there was a resource category that was plainly a common part of everyday life, yet seemed momentarily forgotten by the informant, I would inquire about it. Fruit gathering was a good example of this. Both men and women needed to be asked directly about what types of fruit they gather. My impression is that this is because fruit use is taken for granted as a common aspect of daily life and did not readily come to mind when people were asked to list *natural resources*, a term they seemed to view as something more complex than simply "fruit." The term "natural resource" is abstract and not part of their normal lexicon, so at times prompting was necessary to explain what I meant by the term.

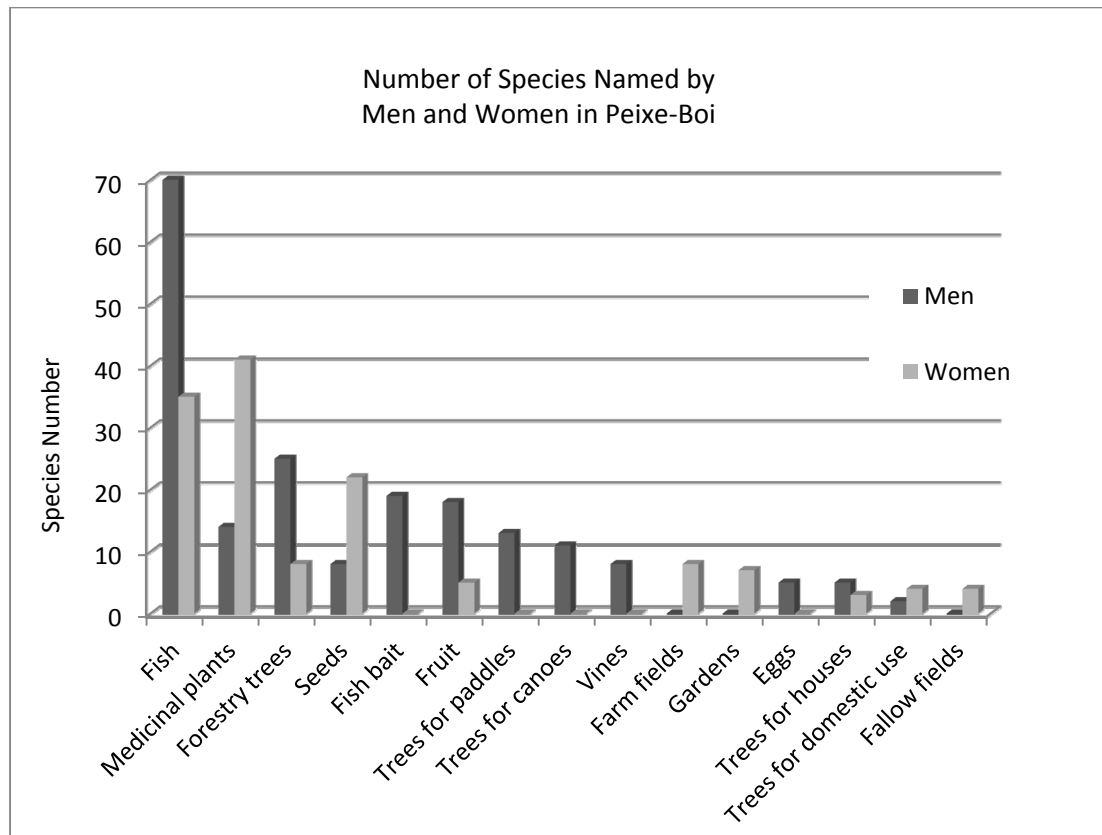


Figure 4. Gendered resource use.

As shown in Figure 4, the 15 men and boys named a total of 12 categories of natural resources. The eight women and girls named ten. Seven categories were named by both men and women. Categories that were listed only by men included wood for canoes, wood for paddles, eggs (turtle and caiman), vines, and fish bait. Categories listed only by women included farm field produce, cultivated fruit and sugar, home garden produce. Both men and women also mentioned fruit, seeds, medicinal plants, fish, commercial timber, timber for houses, and wood for domestic utensils. It is unexpected that men omitted agriculture, as it is an important aspect of their economy and men have the critical role of clearing the forest to create fields. I believe this omission is merely an anomaly that reflects an imperfection in the data gathered for this particular activity on that date. Men clearly have a crucial role in agriculture. They

not only clear and burn the fields but they help in planting, harvesting, and processing the produce. Possibly, this category was overlooked because it is a cultivated resource, whereas the others are all collected from the wild. More likely, it was merely an oversight as when men were asked to assign gendered use to each resource they drew on their map, they marked agriculture as a male domain. In fact, they did not credit women for their role in agriculture in this instance.

The omission of particular categories by women further corroborates the gender division of labor as depicted through the mapping exercise. Women did not mention wood for canoes or paddles, fish bait, vines, or eggs. Men are responsible for making canoes, paddles, fishing equipment, and just about all things constructed from wood. As men dominate the fishing domain and travel more than women, it is consistent that they would include categories for canoes, paddles, and fish bait. These items are not as integral to a woman's activities. Though women did not mention a separate category for vines, they do use vines for domestic utensils, medicines, and artistry. Various vines were included under these other categories by the women, so women's use of this resource was accounted for. One telling omission is that neither men nor women included a category for hunting, which affirms that hunting is not a common activity in this region, as stated in many individual interviews.

In addition to the types of categories named by men and women, the above chart also shows the number of species men and women named within each of these categories. One can see a number of important differences in knowledge about these resources which clearly align with the gender division of labor. Men named more species of fish, trees for various purposes, fish bait, fruit, eggs, and vines, while women named more species of seeds, medicinal plants, and agricultural products.

The following is a discussion of the most critical natural resources used by men and women in Peixe-Boi. As mentioned previously, the information is compiled

from resource maps, species lists, individual interviews, and observations. The maps are shown in Figures 5 and 6. First, I discuss resources that fall primarily within the male domain, following with those primarily used by women, and concluding with those where a significant degree of cooperation between the sexes is the norm. This categorization is based on general patterns. There is a great deal of cooperation among men and women to provide for their families and communities. Often, one gender may take the lead with one aspect of the resource use but the other will also share in some critical aspect of the activity (e.g., men fish but women clean and prepare fish for the meal or, in the case of agriculture, men fell trees when clearing a new farm field, while the women take care of regular weeding throughout the growing season). Agricultural production provides critical resources for daily subsistence and tends to rely more on the cooperative efforts of both men and women than does the production or collection of other resources. However, roughly speaking, lines can be drawn regarding primary responsibility for certain resources.

Men are primarily responsible for fishing, hunting, forestry, gathering caiman and turtle eggs, and specific aspects of agricultural production.

Women are primarily responsible for seed collection used in beadwork (to be sold to tourists), cultivating and processing medicinal plants, maintaining home gardens, and specific aspects of other agricultural production.

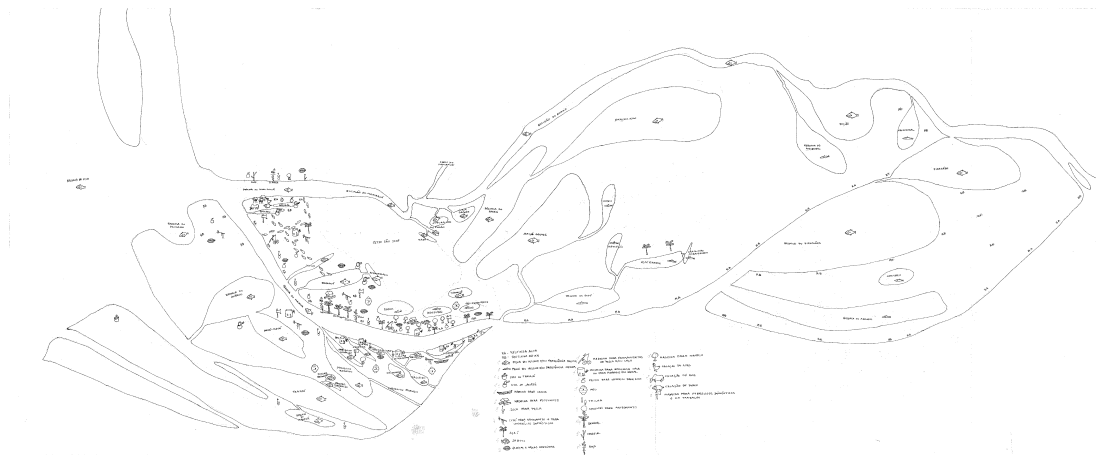


Figure 5. Men's resource map, Peixe-Boi.³⁰

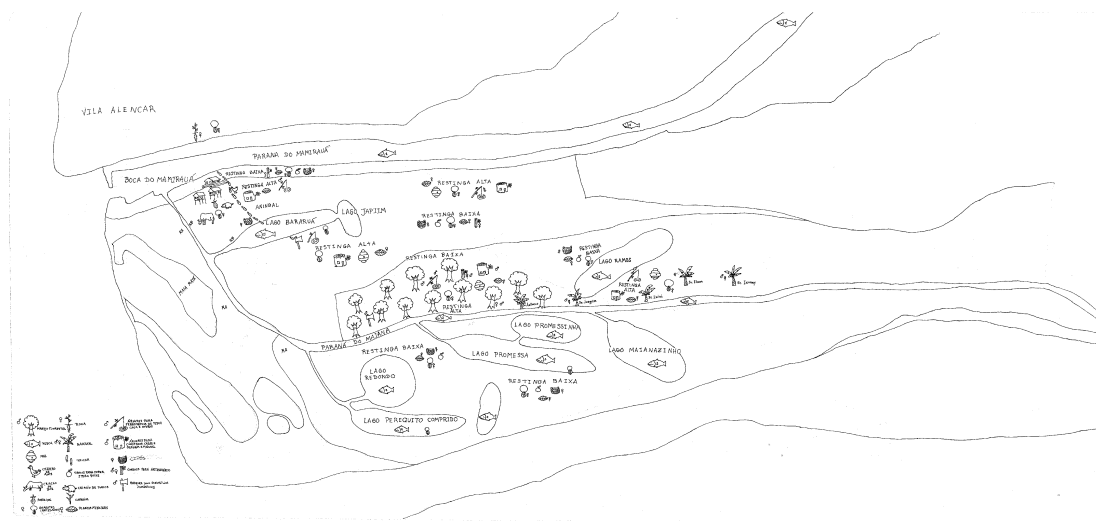


Figure 6. Women's resource map, Peixe-Boi.

³⁰ When viewing in electronic form, use the zoom function to enlarge sections of the maps. For print versions, enlarged fold-outs of maps can be found in the back.

The Male Domain: Fishing, Forestry, Hunting, and Egg Collection

Fishing

Fishing is the primary commercial and subsistence activity throughout the Reserve.

Fish is consumed for lunch and dinner every day and is the main protein source in the local diet.



Figure 7. Men cleaning pirarucu fish for home consumption.

Photo: C. Meola

The responsibility to provide fish generally falls to the men and boys (see Figure 7), though women participate in fishing in limited ways under certain

circumstances which I discuss later in this chapter. For most men, fishing is a central part of daily life. When asked how often he fishes, one man replied as follows:

. . . for me to produce (enough fish) to buy food for the house, to be very well stocked, I fish every day . . . six days a week, maybe five? (*David, 51-year-old male, primary occupation: fisherman*)

Another man describes his daily morning routine as follows. The importance of fish is clear in how he equates having *fish* to having *food*:

When I'm going to place a (fishing) net, early I grab the canoe. I splash water in the canoe and clean it and get going, throw the net, see what I have or what I don't have. If I have (caught fish), I put it in the box to protect it for later because a person without a fish is a person who does not have food. A people who have a fish are a people who won't be stuck thinking . . . stuck with hunger. This is what I do in the morning. (*Andreas, farmer/fisherman*)

Generally, cleaning and cooking the fish is done by the women in the household. When the fisherman comes home for the day, he generally turns the fish over to the women in the family, at which time his duty has been fulfilled. He then can take a break by relaxing around the house or joining the afternoon men's soccer game. One woman confirmed this in her interview when asked who cooks in the household and if the men help:

The men help. They help mostly by fishing, by bringing home the food. We prepare it. It's always the same thing (laughing). He goes and gets it; I prepare it. (*Tania, young married woman with one child, volunteer patrol participant*)

I observed this repeatedly while in the village of Peixe-Boi. With the research house where I was staying only separated from the neighbors' house by a 10 foot plank, I could easily watch the daily fishing routine. The head of household would generally spend a good portion of his day out fishing, coming home by 4 or 5 p.m. Generally, his daughter or granddaughter would then clean the fish out on their floating porch, where they were easily observed. Often, they would bring a pot of fish

to stew over to the research house to be cooked on the gas stove. On occasion if a lot of fish had been caught, I would see the grandsons (one 19, the other 21 years of age) cleaning the fish along with the women, but it was almost always the women who would cook.

There are occasions when women will fish but they are limited, and there are notable differences in the type of fishing in which men and women engage. Men's fishing can be either for subsistence or commercial use, but women rarely fish with the intention to sell their catch. For them it is much more an activity of immediate necessity. They fish when their men are away from the village for more than a day or two. Village life in Peixe-Boi was characterized by a constant flux in who was at home. Both men and women would leave the village for days or weeks at a time quite regularly to take care of business in the urban centers, to visit relatives, or to obtain medical care. Young people will leave the Reserve to pursue education. It is also not uncommon for residents of the Reserve to have a home in town in addition to their primary home in the Reserve. This makes periodic visits to town easier as well as provides the insurance of a second dwelling in years of particularly high floods. Though men, women, and older children commonly spend periods outside the village, generally women with small children tend to stay at home more consistently. One of the main reasons a man will be away from the village is to fish in a more distant location. Water travel is conducted either in a small canoe with a paddle or a slightly larger canoe using a very low-horsepower motor. This means that for the men to reach the more productive lakes that are distant from home, they would have to travel several days. They would then spend up to a week fishing (storing the fish in ice chests) before beginning the return home. This extended type of fishing trip is typically used for commercial fishing, where the catch would be sold to a middle-man well before the fisherman ever returned home. Commercial fishing is heavily

dominated by men. This is dangerous, uncomfortable work; the men often sleep in their canoes overnight in the flooded forest, where they are exposed to frequent rainstorms, potential encounters with jaguars, snakes, and caiman, and the incessant onslaught from mosquitoes. None of the women interviewed fished commercially. Additionally, in my informal conversations, I did not hear of any women engaging in this type of fishing.

However, while the husband is away, the wife might need to fish in order to have food for herself and her children. This is the most typical scenario for women fishing. There may also be the occasional single woman who will fish more often, but rarely do single women maintain an independent household given the physical demands of life in the flooded forest. She is likely to contribute to and depend upon her extended family group for her economic well-being (Lima 1992). When a woman fishes, she will often take her small children who cannot be left unattended, unless she is able to leave them with another family member. Ideally, she will also bring an older son or daughter to assist. She will then generally fish nearby the village for small fish that can be caught with a pole. During the flooded season, women may venture a bit farther as travel into the forest (where certain fish congregate) becomes easier. One single mother's fishing habits are described in the following interview excerpt:

Kayte: Do you fish?

Ana: I fish. I bring my son (5 yrs), put him in the front of the canoe and away we go fishing.

Kayte: And do you fish often?

Ana: Only in the flooded season, when it's all flooded here is when I fish, because now it's worse to fish. When it's all flooded we can fish higher up(stream). There you catch a lot with a pole. There you go fishing (easily) with a pole.

Kayte: So the rest of the year you don't fish or only a little?

Ana: Only a little, but in the flood I fish more, because it's better, because you go easily. The canoe in the middle of the forest goes easily. In the dry season, we stay near this bank here fishing. Near the bank there's only piranha.

Kayte: You fish how many times per week—or per month?

Ana: Now? (in the dry season) I don't fish.

Kayte: And in the flood?

Ana: Two or three times per week . . . (*Ana, 32-year-old single mother*)

This woman has some choice about when she fishes, despite being a single mother. She is an integral member of her father's household and eats all her meals with her relatives. Her father carries the main responsibility for providing fish. He fishes almost daily.

Family cooperation is extremely important to survival in this economy that depends so heavily on subsistence production. When men are gone from the village for an extended length of time, relatives and neighbors will often share their catch with the women whose husbands are absent. Reciprocity can replace the need for women to fish for themselves, as described by this woman whose husband works as an enforcement agent for the Reserve and spends weeks at a time patrolling away from home:

Kayte: Do you fish?

Yaritza: No, just him [my husband].

Kayte: Does he fish a lot or only once in a while?

Yaritza: Once in a while because he works away [from the village], right? So we sometimes buy a fish . . . and my boys are now big [so they can fish].

Kayte: So, you sometimes buy fish. How else do you obtain fish if your husband is not here fishing day-to-day? Where do you get your food?

Yaritza: In my community, many people are brothers and sisters, right? So we trade one with other when someone is lacking. If my son [who is 12], goes fishing he might catch something. If not, we will make this trade . . . of food. One gives to the other when he doesn't have. (*Yaritza, 34-year-old mother of three, ecolodge cook*)

Another woman describes a similar reciprocity with her in-laws who live next door:

Kayte: Do you fish?

Liani: No. Sometimes I go with him but no, I don't fish. Sometimes he fishes for big fish (laughing).

Kayte: He works outside the village a lot, right? When he is not here, how do you get fish?

Liani: When he's not here in the village, it's mostly his father who fishes. When my husband is here, he fishes and gives some to his father. When he's not here, it's the same thing, his father fishes and gives some to us . . . or maybe goes to Alvarães to buy a fish and brings it here. (*Young woman, mother of two small children*)

In contrast to the women's style of fishing or acquiring fish through reciprocity, the men will venture farther away into large lakes and often into the flooded forest, whether on an extended fishing trip or just out for the day. This provides them with opportunity to encounter a wider variety of fish, including the larger, more valuable species. These larger fish require the use of a harpoon or bow and arrow, which women do not tend to use. The pirarucu fish, which is the most valuable and desired fish in the region, can grow to be over 6 feet in length and requires a great deal of strength to land. Not one woman interviewed claimed to use a harpoon when fishing. Most said they use only a pole. Men may use harpoon, bow and arrow, pole, or nets depending on the type of fish they are seeking, while women's fishing needs can be met with a pole.

The differences in fishing styles by men and women are reflected in their knowledge. When comparing the resource maps made by men and women, the extent of their travels can easily be discerned. The men's map is much more extensive in range. Another indicator of men's increased knowledge regarding fishing is the number of waterway categories mentioned when creating their resource map as well as the number of specific bodies of water named. The flooded forest is a maze of winding, interconnecting, and constantly shifting lakes, rivers, and backwaters. There are distinct, permanent bodies of water including both lakes and rivers. However, the face of this watery landscape is constantly in flux, and even the margins of the major geographic landmarks are fluid. During the flooded season, the majority of the land disappears, causing all lakes and rivers to run together. In the dry season, the floodwaters recede leaving a network of lakes, rivers, and smaller waterways that may hold the same general pattern as in the past but may also incorporate changes due to erosion and sediment deposition during the flood.

Because of men's responsibility to fish, they have acquired a more intimate and extensive knowledge of this network of waterways. Men distinguished between nine categories of waterways, while women name only 4. Men categorized waterways into the following nine types:

- Lakes (high fish production)
- Lakes (low fish production)
- Lakes to the left margin of Parana do Maiana
- Lakes under direct management
- *Ressaca* or bay
- *Cano* or small canal connecting two other bodies of water
- *Parana* or medium-sized canal connecting two other bodies of water
- *Estirao* or large canal connecting two other bodies of water

- *Aningal* or shallow backwater

The men not only named more types of waterways than women but also categorized lakes more specifically than did women. While women only referred to them as “lakes,” men indicated whether each lake was a “high productivity” or “low productivity” lake. They also made a distinction between lakes on the left and right side of the Parana do Maiana, a major waterway bordering one side of the village. Finally, they labeled certain lakes as “under direct management.” It is not surprising that men divided lakes into “high” and “low” productivity, referring to fishing yields, since their purpose for visiting these lakes is primarily to fish. They also distinguished between lakes based on their zoning status. Lakes that are “under direct management” refer to lakes that are protected under the regulations governing the Reserve.

Women included references to only four types of bodies of water: *Rio, Parana, Lago, Aningal*. There is also a big difference in the number of bodies of water included and named on the maps. Men drew and named 52 specific bodies of water, while women named only 14, all of which were much closer to the village than the far-ranging water bodies included on the men’s map.

When comparing the men and women’s species lists, some of the biggest differences relate to the fishing category. The region is extremely rich in aquatic life. Scientists have identified 290 species of fish in the focal zone of the Reserve (Padoch, Ayres, Pinedo, and Henderson 1999). Men from Peixe-Boi were able to list 70 species of fish, while women listed only 35. Men’s greater knowledge of fish species is consistent with information gathered through the interviews and mapping exercise as well as consistent with the traditional division of labor. During individual interviews, men consistently stated that their main responsibility was to provide for their family. Their main concern is making sure their family is fed, and this is most often accomplished through daily or regular fishing.

There are also some notable differences in the types of categories that men and women included in the species list which further illuminate differences in roles relating to fishing. Categories that the men include but that are excluded by women are eggs, vines, and fish bait. Fish bait or *isca para pescar* is particularly important. The men list 19 species of fruit, nuts, or seeds that they gather to use as fish bait, while the women do not mention this resource. This further supports the prominence of the male role as fisherman. The men know the habits of specific fish species: in which type of waterway, at what time of year, at what depth these fish can be found as well as what type of bait and fishing equipment is necessary to catch the fish. With the women's fishing role is limited to filling in when men are gone, fishing only in the waters near the village, or accompanying their husbands on occasion, it is not surprising that men would think to mention fish bait as a resource while women do not and that men would be able to name as many as 19 different types. Also on the species list, the men then include two more categories for wood use that women do not: *Arvores para canoa*, or "trees for making canoes," and *Arvores para remo*, or "trees for making paddles." The men list 11 species they use to make canoes and 13 they use to make paddles. These numbers reflect their greater knowledge of wood use as well as their traditional responsibilities to produce canoes and paddles for fishing.

Forestry

Most wood uses fall under the male domain. A growing number of communities within the Reserve participate in the Mamirauá Institute sustainable forestry management program, where they sell timber under the guidelines of a management plan. This commercial use is heavily male-dominated. Peixe-Boi village has two women participating in the forestry program (and at the time of data collection four men, though one was leaving). The two women are sisters and the wives of men who

participate in the group. One of these women is also the mother of another male participant, so though these women participate in a male-dominated activity, they do so with their male kin. This latter woman is also the president of the group. Both she and her sister take lead roles in various activities and stand out from other women in the region. Commercial sale was mentioned by both sexes on both their species lists and their resource maps. The men showed a deeper knowledge of the tree species when naming 25 species harvested for sale versus the women's 8 species. Another commercial use for wood is to make woodcarvings to be sold to tourists as part of IDSME's Artisan program. In Peixe-Boi and Nova Vida, there were several men who made woodcarvings, and no women participated in this type of craft. However, the village of Nova Colombia has a very active artisan group that works exclusively with woodcarving and the group is predominately composed of women. On the resource maps, both men and women in Peixe-Boi mentioned using wood products for making handicrafts (wood, bark, or vines). Vines were mentioned by the men on the species list but not by the women. Both men and women showed knowledge of various uses for vines (handicrafts, domestic utensils such as baskets and brooms, medicines), but men tend to be the ones who harvest vines as it may involve climbing trees and requires outings to the forest.

Most subsistence wood use falls under male responsibility as well. The main forms of subsistence use include wood for building houses (certain types of trees for upland houses, and others for floating houses), household utensils, fishing equipment, canoes and paddles, and fences. These uses fall under male responsibility. There is also occasional need for kindling to fire the stoves used to dry manioc flour. This work is done either by small groups of women or by mixed groups where a husband and wife or other relatives who share food will be working together to process their harvest. Men and women named fairly similar categories for subsistence wood uses.

Both groups included wood for fishing tools, hunting tools, domestic tools, and upland houses. In the mapping exercise, men distinguished between wood for upland houses and wood better suited for floating houses; however, women included a separate category for wood used for floating houses when they made their species list. The biggest difference in the categories listed by men and women was that men included categories for “wood to make canoes” and “wood to make paddles.” Women omitted these categories on both their species list and in their mapping exercise. while men included these categories on both sets of data.

There are a number of non-timber forest products that have important roles in daily life as well. These include bark, leaves and vines for medicines, bark and seeds for artistry, fruit for home consumption (including *açai* which the men designated separately from other fruits), fruit and seeds for fish bait (discussed above under fishing), and honey. Responsibility for gathering and processing these is divided between genders, though gathering falls more to the men and processing to the women. Men list 18 fruit species while women list only 5. This may be because women are more likely to gather cultivated fruit that grows either near the home or in a farm field, while men spend more time in the forest and are more likely to encounter a greater variety of wild fruits. Men and boys are also more likely to climb trees to gather fruit, seeds, vines, honey, or anything else growing at a height. Not only does scaling trees require strength and agility but one may also encounter insects, biting ants, snakes, or other wildlife which, according to various interviews, deters women more than men. Various women mentioned in their interviews that they do not climb trees or on top of their roofs but leave that to their husbands and sons.

Hunting and Egg Gathering

Both hunting and egg gathering are done primarily by men. Hunting used to be a more common activity than it is today. This is most likely due to the regulations that have been instituted within the Reserve over the past 15 years and the presence of voluntary enforcement agents in many of the communities. Like egg, fruit, seed, and even medicinal plant gathering, hunting is most often an opportunistic activity where men will shoot an animal that presents itself to them while they are conducting some other activity such as fishing.

On occasion, a man will head out into the forest with the specific intention to hunt as his primary activity, but that is less common than simply taking advantage of the opportunity to shoot something while fishing or farming. Neither men nor women mentioned hunted animals as a natural resource on either the resource maps or their species list. This indicates that hunting is not a main source of food or income. When asked specifically about hunting in individual interviews, men would sometimes state that on occasion, or on rare occasion, they would kill a duck or a howler monkey for food. They were careful to indicate that the purpose was for consumption, since this is considered legitimate among Reserve residents. Sale of these animals is prohibited by Reserve regulations.

When asked if they hunt, the most common reaction from women was laughter followed by a definitive denial of their own involvement in the activity. They then might offer a comment about the frequency of their husband's hunting, but women clearly do not hunt. One woman interviewed replied to that effect:

Kayte: Sometimes, do you hunt?

Francesca: Hunt? No. I hardly go after the animals . . . for us to hunt . . . no.

Kayte: Does anyone in your house hunt?

Francesca: Only the boys in my house. My husband, once in a while, he'll hunt a bird, a duck, a monkey, like that. But it's rare, no? Sometimes, only once per year will he kill something. It's rare.

Kayte: And your sons?

Francesca: My son . . . he always hunted but it's been a very long time since he's been hunting. Three or four months passes before he remembers to go . . . and then he goes. But he doesn't go to hunt, no. He brings a gun. Then he goes to only to fish. If he sees a duck in his path, he'll shoot. He doesn't hunt like this, to go hunt animals. Only if he sees one . . . (*Francesca, 41*)

Some women would accompany their husband in the front of the canoe while he hunted. Their job would be to spot animals in the trees while their husband paddled and then shot. Individual interviews, such as the one above, consistently pointed to three animals that are hunted: two different types of ducks and the howler monkey. When asked if people used to hunt more in the past and for what types of animals, various people told me stories of large bands of *capivara* that would move past the village, often crossing the river. When this would happen, men and women alike would go out onto the river in their canoes and club the easy targets, bringing home a windfall of meat. But *capivara* are not so prevalent at this time. One animal that is hunted at times and always evokes a great deal of excitement in the community is the caiman. At the time of data collection, there was one area where a controlled and scientifically monitored caiman management program was under trial. Other than this experiment, hunting caiman was illegal. Because the caiman had been protected, the reptiles have become plentiful throughout the Mamirauá Reserve and are easily seen both day and night. They are dangerous animals, and as they proliferate, they also encroach more into areas inhabited by humans, not uncommonly snatching dogs or small livestock from the river's edge. I regularly asked respondents how they felt about the Reserve and whether there were any drawbacks. One woman responded that

she thought it was good that because of the Reserve, the wildlife populations had rebounded, but in the case of caiman, she did not see this as a benefit:

Kayte: Is there anything that is not totally good about the Reserve?

Francesca: No, I think it is good . . . but not the caiman because now we have more caiman. Now we have more. Many more caiman. And it's not good because they grab even the dogs from this house. We have too many now (laughing) . . . they grab dogs, they grab cats at night. One night they got one right there.

Kayte: Right here?

Francesca: Right there at the shore. And then another over at there at Seu Juan's house. We have too many. They grabbed all of them from this house too. They took a little dog that I had. Just grabbed it. (*Francesca, 41*)

There are also numerous stories of human injuries, so at times a caiman will become the target of the human effort to protect one's own. When a caiman comes too close to a village, it risks baiting the wrath of men, who may see it as a threat or may be using the excuse to justify a hunt.

I was present in Peixe-Boi when a caiman that was more than 6 feet in length was killed by two young men. There was a celebratory feeling in the village the next day as they and their family butchered the carcass (see Figure 8). There was great excitement as the story of the hunt was retold and the children spent hours playing with the beast before and while it was butchered. This type of hunt does not occur often and is justified locally as necessary to maintain the safety of the village. The hunting is done exclusively by men, but the processing of the carcass is done by men, women, and children. The meat is distributed to other family members throughout the village, a favor that is later reciprocated by those who receive.



Figure 8. Men butchering a caiman that was reported to be a danger.

Photo: C. Meola

Women's Domain: Home Remedies, Seeds for Beadwork, Home Gardens

Home Remedies

Medicinal plants may be cultivated, gathered opportunistically, or specifically sought out at a time of need. Both men and women may gather them; however, women are responsible for preparation of the medicines and showed greater knowledge of various species and their uses. Both men and women included medicinal plants on their maps and were able to list specific species names. However, women named 41 different species of plants that are used to make medicines, while men only named 14. When asked to label the resources by which gender used the resource more often, both men and women indicated that medicinal plants were within the women's domain. Just as with the seeds for artistry, men and women cooperate in gathering this resource but it

is primarily the woman's responsibility to process and administer the product. That is, it is women who prepare the medicine and supervise its use when family members are in need. Women may also cultivate certain plants near their homes, but none of the men interviewed mentioned involvement in cultivating. Women tend to be more oriented towards health concerns, as depicted by this woman who believes in planting medicines close to home:

All the time in my work in the house, my preoccupation is to have a small garden and have my home remedies. All this I like to have near the house, no? I teach all of them . . . I teach my daughter-in-law as well: "Keep your house well cleaned and take good care to keep the children clean. Always make the medicines and have home remedies. Plant them at home so that you will have them, so you don't have to go running from house to house." (*Lana, 48-year-old mother of 6*)

Men are often sent out to fetch medicinal plants in the forest when they are needed. Otherwise, both men and women will gather plants for medicinal use if they happen upon them while out in the forest for some other reason such as fishing or tending to their fields. These will be stored for future use.

Seeds for Beadwork

Seeds for beadwork are used exclusively by women, though men may bring home seeds to their wives if they are asked to collect them or if they come across them while out in the forest for some other reason. Unlike many nearby indigenous groups, beadwork is not a traditional craft among *coboclos*. The idea of creating jewelry from seeds found in nature to then be sold to tourists was introduced to the Reserve residents by the Mamirauá Institute as part of the artisan program. The artisan shop in Nova Vida is pictured in Figure 9.



Figure 9. The artisan shop in Nova Vida within the Reserve.

Photo: C. Meola

I was told by one of the women in Peixe-Boi who sells beadwork that before the inception of the artisan program, she never viewed (decorative) seeds as having any value. The Coordinator of the Artisan Program explained:

This question of the seeds is very recent . . . from 2003 to the present. Very, very recent. No one ever placed value like this on seeds. For them, this natural resource existed for the wild animals to eat. But they didn't use the seeds.
(*Coordinator of Artisan Program, IDSM*)

At the inception of the artisan program, the women expressed interest in working with both gardening and artistry. They had experience with home gardens but very few of them had experience with artistry. The traditional artisanal products were mainly those used in agriculture and domestic chores such as baskets, sieves, hats, vases, pots, and other tools. Unlike the indigenous populations, these women didn't

have a tradition of creating jewelry, but the interest was there. The IDSM Coordinator of the Artisan Program described the following history to me:

(The women) wanted a work that is lighter—a work that allows them to stay at home. Artistry offers this, no? (It) allows you to stay at home working, watching the children, caring for the house. (*Coordinator of Artisan Program*)

The IDSM Artisan Program began by bringing in older women who did have this experience to teach courses for the others. Both men and women now view the seeds as a valuable natural resource, as both groups listed seeds for beadwork on their resource maps. These were designated by both groups as falling within the women's domain. Though there are a few men who participate in the artisan program, none of them work with seeds. At least one type of commonly used seed must be cultivated, which is done exclusively by women. It is interesting to note that though men do not themselves use the seeds for anything, they are willing to help their wives access them for their projects and view them as a resource worthy of inclusion on their maps. The men were only able to list 8 species on their resource list, while the women listed 22, which further supports women's leading role in the use of this resource.

Home Gardens

Women are also exclusively responsible for cultivating home gardens. This is a challenging activity since annual floods often will wipe out a garden before the produce is mature. There are no home gardens in Peixe-Boi planted directly in the ground since the entire village is inundated annually. Instead, small gardens are planted in an old canoe, filled with dirt and then elevated on stilts (see Figure 10), in an old canoe left floating, tied to a floating house, or on a raft secured to the shoreline, as pictured in Figure 11. Because of these limited planting spaces, women will plant only small herbs near the house, leaving the larger plants like squash, corn, and

melons to be planted in the farm fields that are on higher ground and farther from the village.



Figure 10. An old canoe re-used as a home garden raised on stilts.

Photo: C. Meola

The small home gardens will often include green onion, peppers, mint, and other herbs. Generally, these gardens produce herbs for flavoring foods but may also include medicinal plants. When listing resources that would be placed on the map, the men included specific medicinal plants as well as fruits that would be gathered wild and specific vegetables that are planted in the fields, but they did not mention home gardens or any of the plants that are typically grown in these gardens. In contrast, women listed home gardens as a resource and specified the particular plants that they most often cultivate in the gardens. On the resource species list, the men did not

mention gardens, farm fields, or fallows, while the women mention all three and specified up to 8 different species that might be planted. It's not surprising that men would overlook home gardens since home gardens generally produce spices and medicine, both of which are primarily used in women's work.

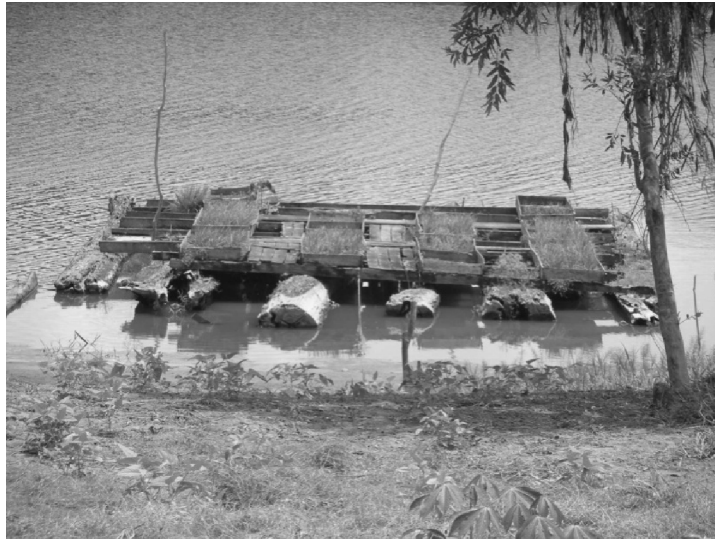


Figure 11. A floating home garden.

Photo: C. Meola

One exceptionally high flood year, these small floating home gardens gave inspiration to a group of women organizing as part of the Artisan Program. The story illustrates how the women's experience tending small gardens contributes to their creative problem-solving in coping with the difficulties of a harsh physical environment. During the flood of 1999, which was the biggest flood in recent times, they made a floating garden. Everything flooded and the people needed vegetables. They wondered how they were going to plant. Mamirauá had an old *flutuante*, or floating house. The women saw the abandoned raft and expressed interest in using it to make a floating garden. The Institute donated the raft and various materials for this purpose. The women succeeded in obtaining the help of their male kin to complete the

construction. I asked who conceived of the idea of the floating garden. The Coordinator of the Artisan Program responded:

(The idea of the) floating garden was the women's. It was very cool. Because they had the little floating gardens, right? Just about everyone in the world has them. But a bigger garden, they hadn't thought of before. They did have problems. They didn't have wood but we (at IDSM) helped. It was a form of motivating them. We donated the floating logs and a part of the wood and the community . . . and the men . . . constructed it. The garden produced very well. With this production, the women sold plenty. They went to Tefé to sell. They were one of the few communities (that year) that had vegetables. They sold so much that they were able to buy a motor and a canoe to transport their produce. So this motivated them greatly. (*Coordinator of Artisan Program, IDSM*)

The women received quite a bit of notoriety from this project, as it was documented by Brazilian journalists who learned of the creative endeavor. This famous floating garden did not continue in subsequent years, as the upkeep was substantial, but the experiment was very successful in the short term, and the inspiration of the idea grew directly from the women's traditional work in tending smaller, home gardens protected from the floods by either stilts or floatation.

Agriculture: Cooperation with Distinct Roles

Agriculture is primarily a subsistence activity in the *várzea*. Because of annual flooding, agriculture is a risky investment, so people plant mainly for their home consumption. Each year, the planting is done during the dry season, while harvest is often completed in a harried rush to collect produce just before the river waters inundate the fields.

In unfortunate years, the river will beat the farmers to the produce, washing the season's labors away completely. During high water, even animals will be moved to rafts for safety (see Figure 12). It is the river level that determines when harvest must be done, often requiring a marathon of several days and nights in order to harvest,

process, and safely store the produce before it is stolen by the river. This urgency, as well as the intense physical demands of farming in the flooded forest, necessitates cooperation between husband and wife and among community members in general (see Figure 13).



Figure 12. A floating pasture during the flood season.

Photo retrieved from www.Mamirauá.org

Farm fields are generally located some distance from the village on the highest ground available, allowing for the longest growing season. Reaching the fields, like any other travel in the region, requires travel by boat. To maintain soil fertility, every few years it will be necessary to clear a section of forest for a new field. This work requires the cooperation of various people, so a couple wanting to clear will call for an *ajuri* at a village meeting. An *ajuri* involves the volunteer labor of various community members for the benefit of one family, or the community in some cases. Individuals will volunteer their labor for a day with the expectation that when they need the assistance of their fellow community members, they will be assisted in the same

manner. The family calling the *ajuri* is also responsible for feeding everyone who donates their labor that day.



Figure 13. An extended family peels manioc tubers.

Photo: C. Meola

Men, women, and children will participate in the agricultural labor of an *ajuri* to clear a new field. However, the roles of each group are distinct. The coordinator of the sustainable agriculture program at IDSM referred to this cooperation when describing how she works with families in her program:

All the work of agriculture is familial. If you're going to work in the program, you have to work with wife, husband and children. . . . Everyone goes together for an *ajuri*. But for example, there are things that men will do because of their physical strength, for example, the felling of a grand tree. Felling a grand tree is a man's thing. I have never seen a woman take an axe and fell a tree. Generally, it is the men who are felling the trees. The fire is also generally a

male thing. Now, the cleaning, planting, and harvesting, are women's work. The men are there too, giving their help, but you can see that in this moment, there exists more a leadership by the women. They command . . . they push . . . they take things here and carry things there . . . it's very cool. (*Coordinator of Agriculture Program, IDSM*)

So the large trees will be felled by the men, while the women will cut down smaller trees, clear underbrush, and assist with hauling branches out of the new field. The men will then light and monitor a fire which is used to clean up the remaining underbrush, while the women are responsible for preparing and serving the meal. The planting is done by everyone: men, women, and children. The remaining labor involved in cultivation is generally left to the women and children. While the plants are growing, it is the women's responsibility to visit the fields to weed periodically. The men are usually off fishing, while the women will take their children to the fields. In this way, the couple cooperates to supply the family with both fish and agricultural produce:

A woman takes her children to the field to weed, to plant, while the man goes to fish. He finds the fish so that when the family returns from the field, they have something to eat. When the woman gets home, she will clean the fish, prepare and cook it so that everyone can eat. (*Coordinator of Agriculture Program, IDSM*)

Children will help as soon as they are big enough. Small children will be brought along as well unless there is someone back in the village with whom they can be left for the day. Once they are in school, academic responsibilities will generally take precedent and they will be excused when school is in session. The harvest is then often completed by both husband and wife or sometimes a small group of related men and women which may span several generations. In Peixe-Boi, one of the few families that still maintained a farm field did so through the cooperation of three couples

spanning three generations, plus a single adult man and various young children. This group has enough human resources to maintain agricultural production.

Common crops that are cultivated include manioc, *macaxeira* (a variant of manioc), squash, watermelon, and corn. Bananas and papayas may also be planted, as well as sugar cane. The most critical crop is manioc, which along with fish composes the bulk of the diet. Once manioc is harvested, it must be soaked for several days to leach out natural toxins. This is done by piling the tubers in an old wooden canoe and submerging it in the river for about three days. This also softens the tubers, making them easier to process. After the soaking period, the tubers are peeled and mashed. Large inedible fibers must be removed by hand. This job is most often completed by a group of people working together and may be several women or may be a family unit including men and women. Once the tubers have been harvested, there is a limited window in which to process the food in order to then store it in a stabilized state. As with the harvest, this time limitation encourages cooperation. The manioc dough is then cooked in a huge, metal pan over a wood fire. These specialized pans are approximately four feet in diameter and sit atop clay stoves in which the fire is made. A wooden canoe paddle is used to stir the manioc constantly until it has dried into hard nuggets about the size of Grapenuts. It must then be cooled by repeatedly lifting basketfuls from the large trough it has been placed into and pouring it through the air. One person stirs the cooking manioc while another sifts the cooling manioc through the air so that the granules don't stick together.

In addition to cultivated crops, some families also raise domestic livestock. Chickens, ducks, cows, and occasionally a pig will be raised. Chicken and ducks are the most common domestic farm animals as they are small, cheap, reproduce easily, and are not that difficult to maintain during the flood. They generally are not provided with special food but are allowed to forage around the house compound. They will

also be thrown scraps. Cows are not uncommon, but they are expensive and labor-intensive, particularly during the flood, so fewer families will raise them. Pigs are consumed; however, they are not as highly prized as chickens and cows, as their meat can convey parasites to humans. During the flood, all animals must be provided with a raft, including the cows. Since cows can no longer forage for themselves on grass which is now all under water, foliage must be cut daily and brought to the cows. One man in Peixe-Boi who maintains a number of cows refers to them as his “bank account,” but they are very labor-intensive relative to other domestic animals. Managing the cows, providing for their floating “pastures” during the flood, and maintaining their fences during the dry season is men’s work.

Children

Children also have a role in gathering natural resources. Young boys learn to fish as they accompany their mother when she fishes and as they spend a great deal of time in canoes near the village practicing their skills. Boys as young as seven will head out with a small canoe and a harpoon, usually with another boy or in a group (see Figure 14). Each in his own canoe, they stand staring at the water with harpoons poised. In observing them, it was clear that they are both playing and learning the skills that will become essential to them as men. Children of both sexes will help in processing caiman, as this is a source of great entertainment for them. They will also accompany their parents to the farm fields to help with weeding, planting, and harvesting.



Figure 14. Two boys fish in front of their village.

Photo: C. Meola

Summary of Natural Resource Use

In this chapter, I set out to describe the gender division of labor regarding natural resource use in a village within the Mamirauá Reserve. My data also allows me to draw a link between the division of labor and gendered relationships to the environment, including gendered knowledge. In order to understand how male and female Reserve residents are affected differentially by living within this co-managed sustainable development reserve, I first needed to understand how each gender interacts with their natural environment. In documenting this gender division of labor, I also established a baseline from which I could see particular research participants diverge. This added to the picture I developed of a number of women leaders who not

only stood out as political leaders but also stood out from the norms of traditional roles in resource use.

Through analyzing the individual interviews, resource maps, and species lists and through my archival research, I found that the male and female domains are generally what one would expect in such a natural-resource-based economy in this part of the world. Men are typically responsible for fishing, forestry, hunting, as well as the difficult and dangerous aspects of agriculture and gathering non-timber forest products and reptile eggs. Women gather medicinal plants and seeds for beadwork as well as cultivate gardens and engage in less strenuous aspects of agriculture.

Clearly, fishing in this region is a male-dominated activity, though women are involved in several ways. Men fish farther away from the community than do women, which was clearly shown by the greater extent of the men's fishing map. Men are also able to name a greater variety of waterways as they fish in these diverse environments, including the flooded forest. Men listed nine categories of waterway, while women listed only 4. Their knowledge of fish species and their skill of fishing are more extensive than women's. Men listed over twice as many fish species as did women, and they included categories for fish bait and wood for canoes and paddles, whereas women omitted these.

Men are also dominant in the use of timber and most non-timber forest products. The Mamirauá Institute forestry program is almost exclusively male, though a few women participate. Men were able to name three times as many tree species as did women. Men have a limited presence in the artistry program, and the few who participate make woodcarvings. Men are responsible for gathering non-timber forest products such as honey, vines, seeds, fruits, and medicinal plants that are either found distant from the community or lodged high in the trees, where difficult climbing is required. Though men in the flooded forest do not devote a great deal of effort to

hunting, the hunting that occurs is generally conducted by men. One species that is not frequently but also not uncommonly hunted is caiman, and this is men's work. I did not hear of any women involved in killing a caiman, though both women and children, particularly boys, will participate in processing the carcass. Men are also responsible for the aspects of agriculture that involve harder physical labor such as tree-felling, clearing, and burning. Similarly, the more physically demanding and dangerous aspects of raising livestock, such as digging postholes, erecting fences, and moving cattle, are done by men and boys.

Women consistently stated in their individual interviews that if they fished at all, it was generally either with their husbands or while their husbands were away from the community for more than a few days, and that they would fish near the village, using only a pole, fishing only for small fish. They might even laugh when asked if they fish for pirarucu or tambaqui, the largest of the fish species. Some women also mentioned fishing only during particular seasons because of the increased ease of catching fish at that time. Men use a greater variety of equipment (harpoons, bows and arrow, poles and nets, while women use only poles). Women also depend on reciprocity as a strategy for meeting their family's needs when their husbands are away from the village. On occasion, they will buy a fish if necessary, but trading food with relatives is a more common solution.

Women's primary natural resource use involves agricultural tasks requiring less physical strength, including maintaining home gardens and weeding, planting, and harvesting farm fields, as well as processing the produce. Women dominate the processing of medicinal plants and will also gather them but at times will depend on their husbands to obtain these plants if they are distant or growing high in the canopy. Seeds for artistry are used exclusively by women, though their husbands may bring home seeds when these are found during the men's travels.

Though this gender division of labor is traditional and not particularly surprising, it was necessary for me to understand how people inside this reserve utilize their resources before I could begin to identify ways in which they are affected by restrictions on these resources or by various other interventions. Also, by documenting this traditional division of labor, my data allowed me to see when certain Reserve residents represented anomalies to these norms. So as I proceeded to investigate the various women who stood out as political leaders, I could also see that these same women tended to diverge from the traditional gender division of labor in some ways. For example, several of the women I identified as leaders in Peixe-Boi were active in the forestry program, and one is the group's president. Another example I found was that though fishing is extremely male-dominated, the fishing cooperative begun through the efforts of the Mamirauá Institute's sustainable fishing program is led by a female president. Knowing the traditional gender division of labor makes these women's achievements stand out even more.

How Programs Alter the Division of Labor

To a certain degree, the traditional gender division of labor is systematically reinforced through IDSM programming on an institutional level. Fishing and forestry programs primarily target men, while artistry and health programs cater to women's interests and needs. When women are involved, they often perform a role distinct from the men's. For example, the forestry program has a few women involved who act as note takers or who deal with the paperwork involved in operating a productive association. The agriculture program includes both men and women in fairly equal numbers, but their participation is still oriented toward gender-specific activities. In the fields, men and women split up to perform their gendered roles (e.g., men clear large trees, women weed). The program, while actively working to include both sexes,

does not attempt to upset the traditional roles. In general, program initiatives follow gendered interests. For example, the agriculture program assists women in improving and marketing products from their home gardens, which is traditionally a female activity.

However, programming has also introduced certain changes to men's and women's natural resource use, and therefore to their labor patterns. In sum, women's opportunities have been broadened, while men's activities have become more restricted. Programs that involve mostly men are ones which focus on traditionally male-oriented activities such as forestry and fishing. Through the introduction of these programs, men's activities have become more highly regulated. Resource restrictions have the greatest impact on fishing, hunting, and forestry—all male activities. So what men are allowed to do now is more limited. In addition, by creating organized cooperatives to harvest fish and timber, an increased level of bureaucracy is introduced to what was once an unregulated, subsistence activity that men were free to pursue as they wished. Now they not only have to harvest resources in accordance with legal regulations but must also have legal documentation of their identity and their membership in a recognized productive association. Many rural people are undocumented and illiterate, so the requirements of operating within a legal productive association present new obstacles for these men. This is one reason why women's presence in male-dominated groups has increased. In both fishing and forestry groups the president is a woman in part because these women are legally documented. Additionally, women may act as note takers or handle administrative duties because they may bring with them a higher level of literacy than the male group members. IDSM offers considerable assistance in navigating bureaucratic procedures. However, this can also be viewed as another way in which local people are kept in a position of dependency.

Women's groups also have to deal with bureaucratic procedures, so women are also impacted by this difficulty; but in contrast to men, women have been presented opportunities to work with new resources that were not previously part of their traditional labor. So unlike men, it is not their traditional labor that is now regulated but their newly established labor opportunities. Additionally, wage labor positions have also been made available to women. Both of these changes have had significant impacts on the division of labor and, consequently, on how men and women interact with one another.

The artisan program introduced the use of seeds for jewelry to be sold to tourists. This is a new use for a natural resource that had not before been viewed as having commercial value. Women in another community took up woodcarving, which was a new activity for females in this locale. These activities allow women to work inside their home if they choose but also encourage them to leave the domestic sphere to join meetings, trainings, and cooperative work efforts.

The introduction of the ecotour program has brought with it a number of disruptions to the gender division of labor while still reinforcing traditional roles in other ways. The biggest change to the gender division of labor is that women are not only working outside the home but also leaving the community for up to two weeks at a time to join the wage labor force. Female employment outside the community for extended periods and women earning an income are both significant changes. The type of work that women engage in through the ecotour program generally keeps within traditional norms, but there are some exceptions. At the ecolodge, women are hired to work in the kitchen, serve meals, and clean. Men are typically hired as nature guides, mechanics, and field hands, though there is some male representation in the kitchen. The manager of the lodge is also a man, which further solidifies the traditional balance of power where men maintain authority. The highest position of authority held by a

woman at the ecolodge is the *governanta*. This “governess” of the lodge oversees all traditionally female labor such as cooking and housekeeping and in doing so reinforces traditional gender divisions of labor.

However, the ecotour program has opened new opportunities to women in several significant ways. Though there were only two female nature guides at the time of my fieldwork, this traditionally male post had been opened to women. These two women are blazing the trail for others to follow. The organization of a worker’s association among the lodge employees also presented female members with new leadership opportunities. The president, secretary, and treasurer were all women, and these women were the most prominent voices in their meetings.

Through the participatory conservation program, other new opportunities for women to expand their roles also were introduced. Since local people were handed the responsibility to guard their natural resources from outside invaders, both formal and informal regulation enforcement was introduced. A volunteer patrol program was initiated which is heavily male dominated but open to women as well. There are a number of women who travel for days at a time outside of their community as volunteer patrol persons. This type of work would typically be considered male work, and these women are breaking new ground in gendered labor patterns. Women, as well as youths, also participate in confrontations with invaders who enter their community’s domain to illegally harvest fish. These confrontations often take place at night, when villagers take to their canoes in the dark to wait for the illegal fishermen with the intention of demanding that they relinquish the stolen fish. This type of informal enforcement work is dangerous and falls within the male domain but is now being shared by both men and women.

How New Labor Patterns Affect Gender Relations

The new work opportunities presented to women by the NGO result in a number of alterations in gender relations. This chapter demonstrates how change in the gender structure occurs on individual, social-relational, and structural levels as well as to the recursive, tightly linked relationships between them. At the structural level, we see that the new employment opportunities include both artisanal production and wage labor and both result in women organizing, earning an income, and working outside the home. This creates the possibility for further change in social interactions and through individuals' internalization of new cognitive images. Participation in the artisan group provides the opportunity for women to discuss their problems and organize to implement solutions. Women also create products with commercial value which provide them with both income and increased self-esteem. Their participation also opens up opportunities to travel to meetings and trainings. Employment at the ecolodge results in even more significant changes to the traditional labor pattern. Ecolodge employees participate in an organized worker's association which requires that they congregate. They receive a set daily wage. And a notable change for women is that as ecolodge employees they work outside of their community for an extended period. In some cases, both husband and wife in a family might be employed at the lodge, but even when this is the case, the pair might still work separate shifts, so this results in an increased degree of independence for many female employees. Also, for a few women, it includes taking on nontraditional roles as nature guides and community tour guides. All of these outcomes contribute to changes in gender relations as these new slots opened to women through structural change then provide them with new resources and new statuses with which they then interact with other agents such as husbands, employers, and Reserve managers.

Organizing

As women congregate, they organize. They share their problems and frustrations and have the opportunity to learn that their problem may not be individual in nature but one that is shared by others in similar circumstances. They are able to exchange ideas, develop strategies for solutions, gain confidence in their ability speak in public fora, and accumulate collective strength to confront obstacles (Goldenberg 2008). Many of the women who now hold leadership positions previously needed to disobey their spouses in order to participate in introduced programs. They remark, in their own words, how critical attending women's meetings was in their process of internalizing new beliefs about women's capacities and roles. These meetings provided crucial support for women to then speak more freely in mixed-sex, public meetings and win the support of the male community.

The IDSMD Coordinator of Community Development discussed how women did not attend meetings before the inception of the Reserve and the importance women's groups have had in increasing female participation in public decision-making:

... in the beginning it was very ... it was very complicated. For example, only men would go to meetings. The women would never go. Today you see, as much as many (women) go, they stay quiet ... but at least they go. But when the Reserve was created, fifteen years ago, no? ... They (women) didn't participate. They didn't even go to meetings. Only the men went. We noted this and we began to think about this. 'How are we going to involve the women in making decisions?' and then came Marilia to work here and she had the idea to start groups, no? ... of women, motivating them to participate and also came an economic alternative that was artistry ... and other areas were sewing ... and we created a way for them to meet and discuss these problems and how they could contribute to the conservation and development of the Reserve. After, they felt safe to go and give their opinions in the bigger meetings. So they began to participate in the assemblies and all. (*Director of Natural Resource Management and Social Development, IDSMD*)

The many meetings and trainings initiated through IDSM programs have impacted the way in which men and women participate in community life and with each other. Dona Beatriz discusses how women in her community didn't used to attend meetings, work outside the home, or participate in organized activities but eventually were able to convince their husbands that this was a good idea. Dona Beatriz, who is 74 years old, is the matriarch of her village. She was president of the women's group in her community for many years, is currently a midwife, and is a community guide for the ecotour program. She described women as "slaves" back before the influence of the IDSM programs.

At first, women were slaves to their husbands, no? If I were married and my husband said, 'You don't leave my house. You are not going out to socialize. You are not going to do such and such. . . . ' I would not go because I was a slave. But now, no. We have this liberty to speak with our husbands and say that the wife is not a slave to the husband. (*Beatriz, Village matriarch, 74*)

Beatriz talked about how there are still cases where the woman wants to do something that her husband disapproves of and that this can cause problems. However, she says that it is rare in her community nowadays that a husband's disapproval will result in a woman staying home. She says women are no longer "slaves":

. . . because in my community I know women who, if their husband says, 'Today you are not going to that place.' She would not go (in the past) but now she leaves. She goes and he leaves her alone. (*Beatriz, Village matriarch, 74*)

She talked more about the impact of women's organization on relations between husbands and wives:

We still have people in our village (who don't like women participating) but now it's changing. It's changing because we have meetings, no? We explain these things to the husbands, and talk about how it's not like this (something

bad), no? . . . a woman also has to work. A woman has to leave. A woman has to converse, no? In the beginning there were men who didn't like women (organizing into groups). When we went to work like this, in the group of women, the men said to not go, that their wives would not go. We had hard men . . . (laughing). But now, no. Now it's equal. (*Beatriz, Village matriarch, 74*)

On another occasion when I asked why she thinks things have improved for women, she emphasized the importance of women's organization as a means to increasing women's role in community meetings:

I think the women changed liked this because . . . I already went to many meetings, no? . . . this type of thing . . . organization of women. I have already spoken a lot in my community.

Like Beatriz, various women who now hold leadership positions, such as Yaritza, Leticia and Neuza, talked about how their husbands didn't like them going to meetings initially—but they still went. Yaritza recalls going against her husband's wishes in order to leave the house and participate in trainings:

Everything he thought was to not allow it . . . but I went (laughing). He never said . . . to go. He thought the opposite, no? For me, I wasn't going to participate. I conversed with him . . . but he never would say, 'yes.' He always stayed quiet. And I went . . . left the house. (*Yaritza, 34*)

Yaritza describes how her husband slowly changed his attitude and became more accepting of her activities:

Yaritza: Now he's changed. It's better. Much better. I say that I will go. A while later he says OK. Sometimes he doesn't agree but he also doesn't stand in my way. He stays quiet, you know?

Kayte And why do you think he changed?

Yaritza: He changed because I showed him that it wasn't what he thought, no? It was very different what I wanted for me, what I wanted for our family. I always said to him that what I was going to do would be good for our community and for our family. . . . Because what I learn for our community . . .

what I learned by going . . . I'd also be bringing home to our family, no? Always something good, a thing to better (our lives), like how to work organized. Because if we don't learn how to work organized, we will never move forward, never know how to live within a group. So I went little by little conversing with him, showing him, talking and he began understanding. He began leaving me be more than impeding me. (*Yaritza, 34*)

Neuza also reported disobeying her husband initially. Now she is the vice-president of her community and the secretary of AAGEMAR, the workers' union for the ecolodge. She has also initiated a turtle rescue effort on the village beach and was responsible for getting her community's land documented with the local municipal government. One IDSM staff member described how Neuza told him that she now feels *valorizada*, or valued, because of her work. She told him, "Now the people listen to me. Before I was just a woman with children." Employment and participation in productive associations have brought these women the opportunity to organize and attend trainings where they share ideas, learn new skills, and encourage one another to expand their horizons. These activities necessitate that women leave the domestic sphere and therefore increase their mobility and interaction with a greater number of people outside their own families and even outside their communities. Participation in these activities also provides women with a sense of pride as well as creates opportunities for leadership roles. This is a significant disruption in traditional gender relations where men retain authority in both domestic and public spheres.

Income

Women's entrance into the cash economy has also contributed to transformations in gender relations. Again, structural changes can be seen contributing to the internalization of new cultural beliefs regarding gender for both men and women and more egalitarian interactions between them. The various economic activities initiated by IDSM have helped women gain more autonomy and greater balance in power

relations with their male kin. The Director of Economic Alternative Activities discussed the division of power inside the home:

I . . . he who produces, who generates money or resources, has a certain power, no? So women who obtain this, working for example at the ecolodge, they also begin to have more decision-making power within the domestic sphere. There is much of this. For example, when it's the man who provides the financial resources, he also dominates, no? . . . the decisions within the house. Where the woman doesn't work, it's the man who gives the orders. That is to say, work to earn money, because there is no lack of work for them (the women). You should have perceived this, because they work from the wee hours of the morning to I don't know what time at night. No? . . . domestic chores in the house, in the field, they have a very heavy work load, only money for this doesn't appear. It's the sale of the products that brings money. And since it's him that sells, even though she produces, but he goes to sell, then they (the men) think they have the right to decide. (*Director of Natural Resource Management and Social Development, IDSM*)

I also asked the Coordinator of the Ecotour Program whether she thought women who earn an income have gained more decision-making power within the home. She responded:

Ecotour Program Coordinator: I think yes. Depends on the woman, no? . . . for sure. But in many cases, the decision-making power within the house, the balance . . . or the division of power within the house has been modified after access to income. Before, they (women) they went to work, in many cases, with their husbands to the fields and all . . . (but) they didn't have access to the money. They had access to the benefits, because the man would shop, buy the supplies . . . sell the produce, buy the food and bring it to the house. But usually it was the man who would make the choices. And now, no. They (women) have money and they make the decisions . . . make investments, buy things for their children and . . . they have greater power to choose.

Kayte: So you think that when the women earn something, that they decide how to spend this money . . . they don't give the money to their husbands?

Ecotour Program Coordinator: No. I think not. They don't give it. The money stays with them.

Kayte: You said that in the past, it was the men who had more decision-making power, before women began earning their own money. Do you think that today one gender has more power or is it more equal?

Ecotour Program Coordinator: Men continue to have more power, I think.

Kayte: Do you think there is a difference between the families where the women have an income and where they don't?

Ecotour Program Coordinator: There is a difference. I believe that when a woman has an income, she gains more power. This doesn't mean that the balance leans more for her side. I think that still we have people, where even though she earns money, she has everything, she buys her things, still . . . if she wants to leave here to go to Tefé, she has to ask permission from her husband. And never does a husband ask permission of his wife to go anywhere. So, with certainty, I think that the men still have more power. But still . . . it's change a little. (*Ecotour Program Coordinator, IDSM*)

Yaritza, for example, describes the biggest events in her life as earning her own money and winning her liberty, both of which were directly impacted by her involvement in IDSM programs.

Kayte: For you, thinking of your whole life, what for you were the most important points in your life?

Yaritza: Everything positive that happened in my life was gaining my own money. To have my own money, to have employment within my own community, within my own area without needing to dislocate to the city. This was a great positive step in my life for my family.

Kayte: So this was more due to ecotourism, or more from artistry?

Yaritza: Artistry also. Both. In the beginning it was more artistry. We were very happy to be earning our own money. Not just me but the others. But now it's more ecotourism. Because also, artistry was because I had less time to give. Artistry just as agriculture. Now it's more ecotourism alone.

Kayte: So, the fact that you now have your own money, how does this change your life? What is different now that you have your own money?

Yaritza: Before I had my money . . . I didn't have (anything) to buy my sandals, my clothes, the thing for my children. Today, I have, no? So, it changed. And before, the little money that my husband obtained, was only for food. It wasn't enough for other things. Today, no. He continues to maintain the food and buy the other things, no?

Kayte: and . . . more than this change of earning your own money, is there anything else in your life, another important thing?

Yaritza: There is . . . to have my own liberty. . . . that. . . . That many . . . before didn't have and many still don't have.

Kayte: Your liberty?

Yaritza: Liberty.

Kayte: And for you, what is this liberty?

Yaritza: The liberty to leave . . . the house, participate, give your ideas, give your opinion, no? so this was another step very important. And many today still don't have, their liberty to go, and participate in something that their own husband won't let them. I was able to conquer this, my liberty to have my rights, to be participating equally with the men and to also have my own money.

Kayte: And how did you conquer this step of obtaining your liberty?

Yaritza: With much force (laughing) . . . with much force and courage to confront, no? to confront, to see that this that I'm doing is good. That it's not wrong, no? and to demonstrate not only to my own husband, that it's not wrong but also those other men, the other husbands that also won't let their wives, that what we're doing isn't wrong. Not everyone goes to fool around, like they say.

We go the same way and we come back the same way we left, no? Because we go with the objective to participate and conquer something. So, it is with this force, that I don't bow my head, and stay always with my head erect and firm, and sure that what I'm doing is good for my family, the community . . .

Kayte: and did you always think this way? Did you always have the idea that you had the right to have this liberty, or is this something you had to learn?

Yaritza: I went along learning little by little. In addition to the women's encounters, I went looking for this in others, in my partners, the others, no? my (women) friends who were seeing that her side was like mine. So we went, we went telling with this here. But it was participating that I was able to discover these things. (*Yaritza, 34*)

Work Outside Home and Community

Working outside of the home and, even more so, outside of the community also contributes to changes in gender relations. Not only does women's participation in new economic activities bring them outside the home more often but particularly their entrance into wage labor positions provided through the conservation project results in women working outside their communities, sometimes for weeks at a time. This was a challenging transition for many families. Women described hesitation and fear initially. For example, Neuza, who now holds various formal leadership positions and regularly works at the ecolodge, recounted her difficulty in overcoming her initial fear of leaving the community to work at the ecolodge:

They called me and I said that I wouldn't go . . . that I didn't want to work. I have never left to work like that. One time, I sent my aunt in my place . . . They asked for me and she said, 'She isn't coming, no. She sent me.' She began to work and said that it was good, that the work was good so I went the next time . . .

Kayte: So the first time you received an invitation to work there (at the ecolodge) you didn't want to go but sent your aunt in your place?

Neuza: I sent my aunt and I stayed because I was embarrassed. I didn't know how to work. 'I don't know how to work. How am I going to go there to work?'

Kayte: How old were you?

Neuza: I was 17 years old. Before, there were only men who worked there. The women, no. They worked in the house, caring for the children, keeping house, and we only did this. The husbands were the ones who made things possible.

And then after came . . . after with ecotourism there, after went the women.
(*Neuza*, 28)

Women not only had to overcome their own fear of expanding their working environments into the public domain but they also had to overcome resistance from their husbands. The traditional power imbalance within the marital unit meant men could control their wives' activities. Just as some women confronted spousal resistance to their desire to work in productive groups, attend meetings or travel to trainings, there was also resistance to women leaving the community to work at the ecolodge.

In some cases, women I interviewed stated that their husband initially didn't want them to participate in work outside the home because they viewed it as a threat to the woman's usual domestic labor responsibilities. Other women talked about how men were concerned that they would be just fooling around. Until these husbands were convinced that their wives' activities would yield a benefit to the family or community, they remained an obstacle. Various staff members explicitly discussed a gendered power imbalance that favored the men who could interfere with women's ability to participate in program activities. One example of this was the Agriculture program coordinator's difficulty in recruiting women for trainings that required travel outside the community such as discussed in Chapter 5 (on female leadership). Women from the Reserve also discussed in a focus group how they struggled with domestic violence, while others recalled instances when their husbands forbade them to attend an event in which they wanted to participate. Dona Beatriz, who had referred to women as having been "slaves" in the past, discussed male resistance to women leaving home to work:

At first, we had husbands who didn't like the woman to leave to work, but now, no. Now we work outside the home. We have some who work over there

in ecotourism . . . but at first, no, they (the husbands) didn't like it. No.
(*Beatriz*, 74)

Neuza discussed how initially she had to go against the wishes of her husband to begin working at the ecolodge:

Now not only the men work, no? When we first started working the men didn't accept it. But the women didn't stop working. They went, They went, like I went, against my husband who didn't want me to go. The people said, 'you have to go too, have to work, and that it's best for you both. It will be a help for you, for your family.' (*Neuza*, 28)

Just as men's acceptance of women's meetings and productive associations increased, men have generally also become more supportive of their wives working at the ecolodge. As women work outside the home in groups within the community and leave the community to work at the ecolodge and attend meetings, they have gained more freedom in other aspects of life as well. When I asked Dona Beatriz whether men or women have more leisure time, she responded by describing how women now have more freedom to leave the community for recreation:

Beatriz: Before, men had more leisure than women.

Kayte: and how was that? The men they fish, no? They leave to fish, leave to work in the fields . . .

Beatriz: They leave to play ball. Leave for . . . leave for everything, no? But now no. The women leave too. A woman goes to play ball; a woman goes to fish; women go to relax, the men too. It's equal.

Though there has been an increase in male support for female employment, much still depends on the man's consent. The Coordinator of the Ecotour Program discusses how women working outside the home requires agreement of the husband and how in some cases disagreements between spouses have led to marital discord:

When a woman works, usually it's like this . . . there's an agreement between husband and wife. She goes to work but this has to be agreed upon between them both. In ecotourism, the pousada . . . when a woman works outside the home . . . outside the domestic sphere, outside agriculture . . . he permits that she works. But if a problem were to occur, he says, 'No, I don't want you to work there anymore.' Sure, not in all cases. But in some cases the women have left their husbands . . . because she didn't want anymore. (*Ecotour Coordinator, IDSM Staff*)

Beatriz also discussed how working outside the community at the ecolodge has increased marital discord in some cases.

Beatriz: We have small children and we've already had many problems in our community, because of this thing with working. You know why? We have women that have left their husbands. We have women who have left their children . . . couples who have already separated. We have a lot of problems with this in our community because of working at the ecolodge. We have men . . . men who today are no longer with their wives. . . . women who left their husbands, who don't live with him anymore.

Kayte: And this is because they wanted to work?

Beatriz: Yes, because she wanted to work and the husband didn't want it. And then she left her children and the husband didn't want the children and there wasn't anyone to care for the children and we didn't know who would stay with the children . . . it was a horrible problem. (*Beatriz, 74*)

The Ecotour Program Coordinator noted in her interview that the IDSM staff tries to minimize marital discord by discussing the benefits and working conditions with the husband before a woman begins work at the lodge:

We, we try to understand the differences and minimize the problems because they (the women) have many problems. Before the person begins working there we try to talk with the husband, to see how it is, so that after it doesn't cause a problem within the household. (*Ecotour Coordinator, IDSM Staff*)

Conclusion

Through examining impacts on the natural resource use gender division of labor, this chapter shows ways in which the introduced programs reproduce the existing gender structure as well as ways in which shifts in labor patterns produce change at individual, social-relational, and institutional levels. With a few exceptions, the traditional gender division of labor is reinforced at the institutional level through resource management programs that are targeted to gender-specific groups. For the most part, men and women continue to engage in activities that follow traditional gender role divisions. Men engage primarily in fishing, forestry, and heavy labor involved in agriculture, while women involve themselves in artistry, home gardening, lighter agricultural tasks, domestic labor, and employment such as housekeeping and serving meals. By systematically reproducing the traditional gender division of labor through highly gendered programs, *difference* between men and women is emphasized. As argued by Lorber (1994) among other gender scholars, it is socially constructed difference that acts as the foundation of hierarchical social systems, including gender inequality. In order for people to justify inequality, they must see inherent difference between group members (Lorber 1994; Ridgeway 2011). By designing programs around gendered work, organizations inadvertently reinforce the hierarchical structure where certain types of work and workers are more valued than others; certain types of people are deemed more capable and therefore garner higher social status; and those same types of people, i.e., men, tend to also continue to have privileged access to knowledge, networks, and material resources, resulting in greater power. In addition, by supporting the traditional gender division of labor through highly gendered programs, existing inequalities are left uncontested such as women's highly unequal domestic labor burden, which precludes their access to many of the privileges and power men traditionally enjoy. As discussed in detail in Chapter 5,

many of the barriers to women's participation and leadership are generated through the gender norms dictating women's role as primary child-care providers and domestic laborers. These cultural beliefs, which act on individual and social-relational levels, are left unaddressed by these highly gendered programs.

However, conservation-related programs are still influencing gender norms and power relations in considerable ways. Despite the general reinforcement of traditional labor patterns, the conservation programs do open some opportunities for gender atypical roles as is seen when women are invited to enter male-dominated jobs as nature guides and to join in forestry groups. These women are contesting the gender hierarchy through their engagement in civic leadership and by breaking into gender-atypical roles as nature guides, volunteer enforcement agents, and informal enforcers of resource regulations, and as group leaders of traditionally male-dominated economic activities. This exemplifies Giddens' conceptualization of agents creating change as they break the cycle of repetitive practice. Women's participation in productive associations and the wage labor force has resulted in increased autonomy, independent income, access to information, larger networks that include outsiders, and greater levels of bargaining power within the household. Through access to their own income and the opportunities for congregating, training, and travel outside their communities, women involved in these programs are experiencing gains in gender equality.

The resource management programs and the associated people they introduce act as social carriers of Western culture and modern institutions, encouraging women to enter the paid labor force; to actively engage in organized, productive associations and political activity; and to expand their activities into the public sphere. Here social relations play a key role in change. Through engaging in these new behaviors, women confront resistance from their male kin. However, due to the opportunities presented

and the encouragement given by management staff, slowly women are internalizing new cultural beliefs and cognitive images of femininity. These changes at the individual level support women's ability to contest inequalities in their interactions with men. Slowly, women are gaining acceptance and support for their new activities as men have become convinced of the value of women's new endeavors.

CHAPTER 5:

WOMEN'S PARTICIPATION AND LEADERSHIP IN THE MAMIRAUÁ RESERVE: NAVIGATING GENDER STRUCTURE

Introduction

In the Mamirauá Sustainable Development Reserve, traditional gender roles generally keep women close to home, caring for children, managing the household, and producing food for the family. Men are seen as the heads of household who often travel more widely and frequently due to their labor demands. This traditional, gendered division of labor is both artifact and perpetuator of patriarchal gender relations where male privilege includes greater decision-making power, mobility, autonomy, and access to resources including earnings and leisure. However, despite the persistence of patriarchal gender relations, the introduction of a participatory conservation program has had a striking impact on men and women's roles and on the power differential between genders. There are both observable costs and benefits at the individual level for local women and men. There are also shifts in social organization at the family and community levels.

In various ways, the introduction of the Reserve programs has assisted women³¹ in expanding their agency. One of the obvious ways agency is expanded is through the creation and support of women's leadership positions. Leadership and empowerment are recursive and mutually reinforcing. Women must be empowered to be able to assume leadership, and as leaders they are more likely to be equally situated with male counterparts in social hierarchies. As leaders, they are also well positioned to assist other women and work towards more equitable gender relations. Since the

³¹ I refer to women in communities where the Reserve programs are active. Unfortunately, this statement cannot be used in reference to all women residing within the Reserve.

Reserve's establishment, not only has women's participation in organized groups increased significantly but so has female representation in leadership increased. Though they were still heavily outnumbered by male leaders, I encountered a number of extraordinary female leaders who succeeded in overcoming the many obstacles to establishing themselves as leaders in a male-dominated society. Guided by Connell's (1987) three main structures of gender relations (labor, power, and cathexis), this chapter focuses on women's access and barriers to power via leadership. Though Connell separated gender structures into these three categories, he acknowledged their interconnected nature, which is also evident throughout this chapter. The domestic division of labor and women's shift into the wage labor force clearly have strong implications for women's agency in relation to the men in their lives.

In this chapter, I examine 20 women whose involvement in leadership positions varies from none to those whose days are greatly consumed by public life. What interests me about female leadership in this setting is the diversity in range of leadership and how the few women who devote much of their lives to public work have come to fill these roles when their circumstances at first appear quite similar to those of women who do not participate in organized groups at all. This chapter examines the opportunities Mamirauá women are offered; the factors that condition their lives and influence their ability to assume leadership roles; the challenges they face; the assistance they receive or lack; and ultimately, how leadership enhances or impinges on their well-being. This allows me to understand what structural differences in the lives of women leaders allowed them to overcome the obstacles they faced. This information has important policy implications for conservation and development initiatives. Understanding how successful leaders have been able to assume and maintain these roles enables the development of policies to support this process more systematically.

Using participation and leadership as a window through which to understand gender structure, I draw on the integrationist perspective (Brush 2003; Risman 1998, 2004; Ridgeway and Correll 2004; Yancey Martin 2004; Ridgeway 2009) as elaborated in Chapter 3 to examine how gender structure is at times reproduced while other times transformed through the intertwined processes of internalization, interaction, and structural constraint. I posit that the successful women leaders in Mamirauá have been enabled at the individual, relational, and institutional levels in order to achieve and maintain their gender a-schematic positions as leaders. This chapter examines the importance of all three processes in the reproduction and transformation of gender structure.

Research on Women's Leadership

Women's leadership has not received a great deal of attention in participatory natural resource management projects, since projects tend to tap into pre-existing local networks, which are typically male-dominated. Though community-based natural resource management is built on the concept of local participation, this involvement has often meant the inclusion of pre-established local leaders who tend to be men. Minorities, whether defined by class, caste, religion, ethnicity, race, gender, or some other form of difference, are often excluded, particularly from positions of authority. The importance of gender issues has received growing attention in recent decades; however, the focus of these efforts in relation to natural resource management has been on documenting inequalities in participation (Agarwal 1997; Buchy and Rai 2007) encouraging women's participation in projects (Agarwal 1997; Meinzen-Dick and Zwarteveen 2001); women's relationship to nature (Warren 1990; Shiva 1989; Mies and Shiva 1993; Jackson 1993; Joekes, Leach, and Green 1995); gendered knowledge (Fortman 1996; Fortman and Nabane 1992; Rocheleau et al. 1996); roles

and labor burden (Dankelman and Davidson 1988; Leach 1992; Agarwal 1989; Cleaver 2000); women's interests (Leach 1992; Dankleman and Davidson 1988) and rights (Rocheleau 1995, 1996), particularly access to essential natural resources (Meer 1997; Buchy and Rai 2007; Agarwal 1997). Gendered inequalities in costs and benefits (Cleaver 2000; Mayoux 1995; Meizen-Dick and Zwartveen 2001) and gendered effects of environmental degradation (Agarwal 1991, 1997) have also been themes that have received attention in the literature. However, the focus on the relationship to nature, participation, and rights has generally not extended to discussions of women's leadership.

There has been a great deal of discussion about women's participation and even some attention given to the need to increase women's role in decision-making, but leadership is distinct from both participation and decision-making. John Gardner has written extensively on leadership, holding posts under various presidential administrations. He has directed a number of corporations as well as held academic posts at several colleges and universities. In his book *On Leadership* (1990), Gardner defines leadership as follows:

Leadership is the process of persuasion or example by which an individual (or leadership team) induces a group to pursue objectives held by the leader or shared by the leader and his or her followers.

Though Gardner does not focus on grassroots leadership or female leadership specifically, his definition applies broadly to my research context. However, I take issue with one aspect of his definition, which is his statement that a leader induces a group to pursue objectives held by the *leader*. This piece of the definition appears to refer more to power than to leadership, though later in his explanation, Gardner elaborates that he sees the interaction between leader and follower as two-way, where each is influenced by the other. He also takes care to distinguish leadership from

power, status, and authority. He argues that people who fill positions of high rank have status but not necessarily leadership skills. Similarly, he explains that though leaders inherently hold a degree of power, power can manifest without leadership, such as the control that can be obtained through use of money or force. Authority he defines as “legitimized power,” again arguing that one does not necessarily need to possess leadership skills to attain a position of authority.

His definition above, written in such broad terms, does not illuminate the various facets of leadership as Gardner sees them, but these become plain in his description of the tasks of leadership. By examining the tasks of leadership, we get a more complete view of Gardner’s meaning of the term *leadership*. He lists the following tasks: Envisioning goals, Affirming values, Regenerating values, Motivating, Managing, Achieving workable unity, Preserving/raising level of trust, Explaining, Serving as a symbol, Representing the group, Fostering the process of renewal, and Empowering. Although Gardner’s leadership definition states that leaders may “induce their followers to pursue objectives held by the leader,” which alludes to an imbalance in power, he includes empowerment of followers as one of the tasks of a leader. He explicitly defines this leadership task in a way that reveals a more egalitarian relationship between leader and follower. To Gardner, the task of empowering includes sharing information and power, building confidence of followers, removing barriers to the release of individual energy and talent, locating and husbanding resources, resolving conflicts, and providing organizational arrangements appropriate to group effort. Within Gardner’s vision of empowerment, the three levels at which gender structure is created, reproduced, and transformed are evident. At the individual level, the importance of internalizing a *belief* in one’s own capability is implicit in building confidence, while sharing power implies the adoption of more egalitarian cultural expectations. Sharing power and resolving conflicts

attends to social-relational contexts between individuals and groups at the interactional level. Last, at the structural level, leadership attends to removing barriers to the release of individual talent, finding and husbanding resources, and providing effective organizational arrangements. If we consider Gardner's work on leadership in the context of gender structure theory (Risman 1998), we see that leadership involves empowering others and that empowerment requires tapping into the processes of internalization, interaction, and structural enablement.

The literature on leadership often includes discussions of decision-making and participation, which are concepts often connected with leadership. Though decision-making is an integral part of leadership, the two are distinct concepts. Caroline Sweetman (2008) distinguishes between equality in decision-making and leadership in a special issue on women's leadership. Sweetman states that most leaders are granted decision-making powers as individuals but that "... the notion of leadership is understood to be about an individual woman, or a group of women, adopting the role of *representing a larger constituency*." While Gardner lists representation as one leadership task of twelve, to Sweetman representation is the key task that distinguishes a leader. The women leaders in Mamirauá all hold the responsibility of representing others as part of the positions they hold. Additionally, I found that these women also routinely engage in most, if not all, of Gardner's leadership tasks in the process of executing their leadership duties.

Decision-making has been a topic of discussion in the academic literature relating to natural resource management. Nemarundwe (2005) discusses women's strategies to influence natural resource management decisions to their advantage using informal means. She posits that women's influence in decision-making is underrepresented in the literature because studies often focus on formal institutions. Women find ways of influencing their husbands, who then represent them in public

fora. Her data show that women's use of informal strategies to influence husbands and their use of collective action increases their bargaining power. Though the capacity to influence decisions is an essential aspect of leadership, it does not define leadership. Authors such as Jiggins (1997) and Rocheleau (1991) have expressed the need to improve women's influence in decision-making in natural resource management. Others have recognized that women are not a homogenous group and that some women have better access to resources and more influence in decisions based on other forms of difference such as life stage, class, caste, race, and marital status (Bradley 1991; Nabane 1997; Fortman and Nabane 1992). Thomas-Slayter and Sodikoff (2001) discuss the importance of women's participation in decision-making and conditions for increasing their involvement, while Jha (2004) asserts that participation, for example in agricultural production, may be important but does not equal decision-making in public fora.

Though the goal of gender equality has been mainstreamed in program planning for both development and natural resource management projects, women leaders are still the minority. Attention is generally placed more on encouraging female participation in projects than on parity in leadership. This is a critical distinction: participation versus leadership. Participation can vary from simple membership in an organized group without any power to active engagement where participants propose initiatives and share in decision-making. Agarwal (2001) developed a typology of participation that ranges from nominal participation (membership in group) to passive participation (being informed of decisions *ex post facto* or listening only) to consultative participation (being asked opinions without guarantee of influence in decisions) to activity-specific participation (being asked to undertake specific tasks) to active participation (expressing opinions whether solicited or not) to, finally, the most empowered form of participation, interactive (having voice

and influence in the group's decisions). Of all these levels of participation, only the final level approaches leadership. However, even this degree of participation, having influence in a group's decisions, does not imply or necessitate representation.

Gender issues have received even greater attention in development planning than in natural resource management per se, though there is considerable overlap since many development projects, such as irrigation and agricultural projects, also fall within the realm of managing natural resources. As mentioned in Chapter 3, it was in the 1970s that gender equality began to receive attention development. Beginning in this pivotal decade, there has been a progression of policy perspectives on gender moving from Women in Development (WID) to Women and Development (WAD) to Gender and Development (GAD) and within the environmental domain from Women, Environment and Development (WED) to Gender, Environment and Development (GED) approaches such as feminist political ecology (Rocheleau et al. 1996), feminist environmentalism (Agarwal 1991), and Women, Culture, Development (Bhavnani, Foran, and Kurian 2003).³² As with the natural resource management literature, discussions within the development literature have greatly emphasized the inequitable impacts of projects and the need to increase women's participation in projects. Discussion of female leadership on an international scale has focused more on women's attainment of formal, political positions than on the role of marginalized women as leaders in development projects. The UN Fourth Conference on Women in Beijing established a Platform for Action (1995) that set the goal to "take measures to ensure women's equal access to and full participation in decision-making and leadership . . . in all governmental and public administration positions" (UN Fourth Conference on Women Beijing Platform for Action 1995). Organizations such as the

³² See Chapter 3 for a more in-depth discussion of these policies.

United Nations Development Fund for Women (UNIFEM) have been established to “advance women’s rights and achieve gender equality, including the strategic goal of advancing gender justice in democratic governance in stable and fragile states” (www.unifem.org). Similarly, the Women’s Environmental and Development Organization was established specifically to “accelerate women’s participation in national and local political office worldwide” (www.wedo.org). However, in addition to efforts to increase parity in representation in formal, political positions, there also has been some discussion specifically on aspects of female leadership in the development project context.

Some specific issues of concern regarding leadership include arguments for including more women in development projects (Sweetman 2008), women-only projects (Leach 1992; Agarwal 2001; Buchy and Rai 2008), barriers to women’s leadership (Goldenberg 2008; Chhoeun, Sok, and Byrne 2008; Bushnell 2008; Sweetman 2008; Dangol 2005; Opare 2005; Mayoux 2000; Agarwal 1994; Rocheleau, Thomas-Slayter, and Wangari 1996), supporting women leaders at the grassroots level (Sweetman 2008; Antrobus 2000; Goldenberg 2008; De Mello e Souza; Bushnell 2008), women’s informal means of influencing decision-making (Nemarundwe 2005), women’s roles in formal institutions (Opare 2005; Sweetman 2008; Haritas 2008; Ahmend 2002; Chhoeun, Sok, and Byrne 2008) and women leaders’ activities and motivations (De Mello e Souza 2008).

The main discussions in the literature that have bearing on my work focus on barriers to women’s leadership and organized efforts to increase women’s presence in leadership positions, both of which are means of expanding agency. Various authors have pointed to cultural mistrust of women’s abilities to lead, patriarchal norms, and religious beliefs as barriers to women’s leadership (Goldenberg 2008; Chhoeun, Sok, and Byrne; Opare 2005; Bushnell 2008). Dangol (2005) in a chapter on participation

and decision-making in the Nepalese community forestry program, goes a step further by asserting that gender dynamics vary according to ethnicity and caste. This author argues that decision-making, at least within the household, is shared more equally between men and women in households of ethnic minorities and lower castes. This finding is consistent with my observations in the Mamirauá Reserve communities. Though there are many examples of the persistence of male dominance in these communities, women (who would all be considered poor in comparison to middle-class Brazilians) work long hours in which they make numerous decisions about the health and welfare of their families; men often work outside the community, leaving the women as the de facto head of household, which increases their opportunity for decision-making. Alternately, those women who work at the ecolodge, like men, work outside of their communities for days or weeks at a time. This increased independence gained through individual income and separation from the home increases women's bargaining power in decision-making within the family unit, an outcome with important ramifications for social organization, as this particular finding is salient to each of the three empirical chapters in this study. In the case of Mamirauá families, the struggle to support the family, which requires both partners to labor long hours, often far from home, ameliorates the effect of the traditional patriarchal norms which support male dominance in decision-making.

Marital status plays a critical role in a woman's ability both to participate in organized activities and to assume leadership positions in those organizations. Opare (2005) notes that a husband's permission is often required for a woman to travel outside her community, whether to visit friends and family, engage in other social activities, or participate in activities required by a leadership post. This is also the case for Mamirauá women, as is discussed in detail later in this chapter. Women in Mamirauá marry or partner early and so come into adulthood having learned to accept

their husband as the ultimate authority in their household. With marriage comes the respect of adulthood but also the constraints of subordination to the will of one's husband. Men in Mamirauá, for example, do not need to ask permission of their wives to leave the community, but women are bound by this social norm. In addition to the constraints created by this cultural expectation, marriage and family also create practical constraints for women. A woman's primary role is viewed as wife and mother, so any other activities must be prioritized below these roles. Men may be reluctant to allow their wives to take on additional responsibilities of leadership roles for fear that it will diminish the women's ability to fulfill their domestic duties.

The duties involved in women's traditional roles as wife and mother pose significant constraints to their having the time and energy to devote to leadership positions. Opare (2005) discusses this issue in a study on rural women in Ghana: "The long list of daily tasks expected of the average rural woman means that most women wake early and [go to] sleep late, and so have little time to get involved in other activities." The labor burden becomes even more ominous for women also working outside the home and especially so for those running for a formal office. Sweetman (2008) discusses how institutional culture expects politicians to have no other significant responsibility outside their office. This assumption does not account for women's domestic responsibilities and leaves women with the double or triple shift that accompanies the multiple roles of mother, employee, and leader. Meinzen-Dick and Zwartveen (2001) state:

Because of their high domestic and productive workloads, the opportunity cost of time to attend meetings and do other work for the organizations is different (and often higher) for women than for men. Important in this respect is that it is not as easy for women to transfer some of their responsibilities to their husbands, as it is for men to leave some of their tasks to their wives.

Sweetman (2008) also points out wealthy women can hire domestic help to lighten their burden, freeing them to focus on community roles, but that this is not possible for poor women. Though I heard some accounts of women in Mamirauá utilizing the services of other women to assist with domestic work, particularly child care, this is usually a reciprocal arrangement based on bartering services. I met no women within the Reserve who could afford to hire regular domestic help.

Women's lack of economic resources has also been documented as a barrier to their participation in leadership (Sweetman 2008; Chhoeun, Sok, and Byrne 2008; Mayoux 2000). As mentioned above, Sweetman argued that poor women do not have the option of hiring domestic help to lighten their labor burden, thus forcing them to squeeze leadership duties into an already burdensome workday. For women interested in formal, elected positions, success generally requires funds for campaigning and traveling to events. Poor women do not have the ability to fund these activities themselves and usually face challenges in raising these funds. Bushnell (2008), writing about the factors keeping women entrepreneurs in Nepal from leading the sector, argues that cultural norms keep women from accessing the necessary credit to support their business ventures. Obtaining a loan often requires collateral such as ownership of land. Despite recent laws granting equal inheritance rights to sons and daughters, women are rarely given deeds to family land, especially once they are married (Bushnell 2008). Even if a woman holds a deed, banks may still require a guarantee from a man before granting a loan (Mayoux 2000). Women in Mamirauá are similarly limited by lack of resources to travel to meetings and pay for accommodations and food in the urban centers during these functions.

Various barriers to women's participation in leadership activities were noted in the 1997 Regional Conference on Women in Decision-Making in Co-operatives in Tagaytay City, Philippines. The conference produced a Declaration and Platform for

Action for the Enhancement of Women's Participation in Leadership and Decision-Making in Co-operatives, which lists six barriers to women's leadership including the ones mentioned above. Additionally, it was noted that bias for male organizational style, such as holding meetings at night in places that may be unsafe for women or utilizing bureaucratic management styles, discriminates against women's participation in meetings (AWCF and ICAROAP 1997). Meizen-Dick and Zwarteveen (2001) discuss how time and location of meetings can impose higher costs for women than men if women's constraints are not considered. Meetings at their research site in Sri Lanka are held at night, which is considered preferable to men but highly problematic for women. They also mention that meetings in some locations are held in bars, which is also unsuitable for women. As discussed in a later section of this chapter, the physical challenges and risks involved in traveling to meetings in the flooded forest of Mamirauá present deterrents that are particularly difficult for women, especially those with small children in tow.

Yet another significant barrier to women's leadership that has been widely acknowledged in the literature is lack of education, training, and awareness of opportunities (Goldenberg 2008; Bushnell 2008; Chhoeun, Sok, and Byrne 2008; Opare 2005; AWCF and ICAROAP 1997). Lack of instrumental empowerment can reinforce internalized cognitive images of women as inferior, as well as norms that proscribe male/female roles. The Declaration and Platform for Action for the Enhancement of Women's Participation in Leadership and Decision-Making in Co-operatives (AWCF and ICAROAP 1997) states, "in some co-ops, women are not given the same opportunities as men for basic training and higher education in such areas as finance, technology and management." Chhoeun, Sok, and Byrne (2008) also document that female councilors were given fewer opportunities for training sessions with government agencies and NGOs. Goldenberg (2008) argues that the limits of

language, experience, and cultural factors can add to inhibitions for women to participate fully in public fora. Lack of education and training can compound another problem that has been identified for women, that of confidence in their ability to lead and make sound decisions. This is where internalization of social norms and cognitive images play a role in limiting women's agency. Chhoeun, Sok, and Byrne (2008) note that women "often feel less confident than their male counterparts about making decisions on their own, or challenging decisions that they did not agree with."

Adopting the self-image as the type of person who can organize and lead others, who speaks to strangers, and who even has the confidence to speak in public was noted as a major accomplishment by various women leaders in Mamirauá. Many of them reported feeling shy and embarrassed when they were young. Some of these women remembered being uncomfortable speaking with Mamirauá staff in the early days of the Reserve, as they were not accustomed to speaking to strangers. But through repeated positive interactions with outsiders and various opportunities for training, they learned to mingle comfortably with Mamirauá staff and speak up in public. Opare (2005) refers to low education levels as "the bane of women especially in rural areas."

This study draws a connection between instrumental capacity-building, empowerment, and internalized cognitive images of gendered selves. She names illiteracy as "the main stumbling block to becoming more involved in the community decision-making process" and links it to negative self-image. She emphasizes that even in rural communities, people in positions such as chairperson or secretary are responsible for keeping meeting minutes and agendas, which requires literacy. Soliciting the support of donor and government agencies also requires literacy skills to read and fill out documents. In Mamirauá, the most active women leaders all have some level of literacy, enough to read and take notes. Though their education level may be limited, it is generally higher than that of other adult women in their communities.

Overcoming Barriers

In addition to discussions of barriers to leadership, another major theme in the literature revolves around ways to assist women in overcoming these barriers. Two of the main barriers to leadership are structural in nature, i.e., women's agency is constrained by the outcomes of patterned institutional systems. Given that two largely identified barriers to women's leadership are lack of economic resources (Chhoeun, Sok, and Byrne 2008; Sweetman 2008; Bushnell 2008) and lack of education and training (Goldenberg 2008; Bushnell 2008; Chhoeun, Sok, and Byrne 2008; Opare 2005; Premchander and Chidambaranathan 2004), it is no surprise that ameliorating these two problems is a common call within the literature. The importance of increasing literacy, formal education, and offering skills training are emphasized by these authors. Premchander and Chidambaranathan (2004) specifically name the need for technology training for both men and women and capacity building for women to take on leadership roles including training on traits and tasks of leadership. They also argue that because women have little time for additional responsibilities in their workday, the costs of attending these trainings are covered by the supporting agency, and they specifically call for child-care arrangements to be made available at the training venue. In Mamirauá, considerable efforts are made by the NGO to provide opportunity for leadership training, as discussed later in this chapter, although efforts to cover the costs have been erratic, and little effort to accommodate children has been made. Mello e Souza (2008), writing about grassroots women leaders in Rio de Janeiro, Brazil, finds that women leaders are motivated by the opportunities for education offered through their activism. Through their work, they meet many new people and engage in new activities, and have access to education and training opportunities that take them to environments such as nice hotels and wealthy neighborhoods that they otherwise would not have economic resources to access.

Increasing women's economic stability is a common goal in development projects and is often also included as a goal within sustainable natural resource management projects (though women may or may not be targeted as a separate population). The Mamirauá Institute has made considerable effort at supporting women's economic development particularly through the ecotour and artisan programs. Interviews with local women engaged in these programs revealed women repeatedly praising the positive effects that having one's own income has had on their personal well-being as well as that of their family as a whole. The Mamirauá Institute has also established a microcredit program made equally available to both men and women's groups, which has been helpful in launching various women's economic endeavors.

Another common theme in the literature focuses on ways to increase women's participation in organized groups and their presence in leadership roles, and ways to increase gender equality among established male and female leaders. Various authors have discussed the importance of program planning for gender equality, the need for an external change agent, and the need to analyze organizational structure for gender equality (Agarwal 1997; Ahmed 2002; Premchander and Chidambaranathan 2004). Premchander and Chidambaranathan (2004) argue that the prevalence of women leaders is critically influenced by the presence of an external change agent. Referring to their research context in rural India, they state:

[Gender] conditioning is so deep in both the genders that unless proactive steps are taken at the policy level and supported with action by development practitioners, change may not even get initiated. This change has to be triggered from the outside. Gender sensitivity training must be an essential part of every stage of programme design.

These authors present a list of "key requirements for enabling gender equitable leadership development for sustainable natural resource management," the first of

which is to “recognize the key role of an external change agent.” A number of other recommendations also refer to organizational structure and program planning, including the following:

- Participatory approach must be built into the programme design
- Training of all partners at senior levels for gender awareness planning
- Well-articulated strategy for gender equality
- Gender-segregated data required on activity profiles, work divisions, aspirations perceptions, skills, constraints, etc.
- Gender balance among staff implementing projects at all levels
- Gender sensitivity training at all levels for all project partners

Agarwal (1997) also emphasizes the importance of a gender-progressive NGO presence. She asserts that discussion with men about women’s concerns by NGO staff can reduce male hostility towards women’s demands for access to common lands. She also raises consideration of the benefits and drawbacks to women-only organizations, pointing out that providing women with a space to discuss their concerns can increase women’s verbal participation in such discussions but that women-only groups can also provoke male resistance to women’s efforts. An external change agent, such as an NGO, can offer critical assistance as an intermediary in such cases and can increase women’s bargaining power with both the state and local community (Agarwal 2001). Agarwal also asserts the importance of gender-sensitive forest officials in the research context of forest management in India. This recommendation is similar to some of the recommendations put forth by Premchander and Chidambaranathan (2004) regarding the importance of gender-sensitivity training for staff and gender-balanced ratios among staff. In a subsequent article on participatory exclusions, Agarwal (2001) asserts that more female forest service officials would also help women villagers better represent their concerns to the state.

Yet another suggestion offered by Agarwal (1997) in regard to project planning is the inclusion of women from the beginning of the establishment of new organizations. She argues that the chances of women's sustained participation are greater if they are included from the start in all efforts. Last, Agarwal asserts that a critical mass of women is necessary to achieve effective voice in mixed fora. One of the barriers to women's participation in public fora is that men will often intimidate or ignore women into silence. Agarwal argues that men are less able to ignore women's voice when they are present in larger numbers. Similarly, Premchander and Chidambaranathan (2004) found that larger numbers of women at meetings increases women's verbal contribution. They call for an equal, 50/50, gender split among representatives in formal positions, which contrasts the often skewed quotas of 30% when they exist. The only formal quota I heard of among representatives in Mamirauá was one regarding the Deliberative Council, which calls for 30% women.

In the case of Mamirauá female leaders, they are more vocal in settings where they are most comfortable, such as in their own community or sector meetings, but interviews revealed that the confidence to speak in public fora was developed through training, the establishment of women-only groups, and opportunity for practicing public speaking in front of larger, more diverse crowds. Still, several male councilors on the Deliberative Council reported that their female counterparts (though very vocal in other settings) are still generally more reserved at the council meetings. I attribute this to the power imbalance present not only between genders but also between the classes of representatives present at those meetings.

Claiming political space for women leaders is another recommendation made by various authors. Women often lack the physical space to meet (Premchander and Chidambaranathan 2004). Goldenberg's 2008 article on grassroots women's leadership and deepening democracy argues that in order to "deepen democracy," we

must “support spaces—both literal and metaphorical—that enable grassroots women to organize as leaders and engage with local government to achieve change in their communities.” She argues that “poor women are unlikely to participate effectively if they have not first come together as a group to develop relationships, discuss and debate their experiences, concerns and opinions, and develop a shared analysis and agenda for action.” This argument echoes that of Agarwal’s emphasis on the importance of women-only groups. It is also salient to the experience of Mamirauá women who repeatedly told me in interviews how important their meetings with other women and their communities have been in helping them organize, articulate their concerns, and win the support of the men in their communities. Goldenberg (2008) argues that donors need to support women’s collective action. She argues that women’s self-organizing provides a base for their political activity, that women need to claim a political space and to work to break down “problematic habits of relating between government officials and citizens, confronting the power-laden modes of interaction that are commonplace.” This description aptly fits the power relations between local Mamirauá residents and the governmental and non-governmental organizations that co-manage the Reserve. Yet another suggestion regarding political organization is made by Bushnell (2008), who argues the need for increasing women business leaders’ visibility. By recognizing women’s accomplishments publicly, she argues, other women will be motivated to enter business. Mello e Souza (2008) also found that leaders’ social recognition reinforced their motivation for their engagement. Antrobus (2000) suggests that building bridges is necessary between women bureaucrats and those working outside formal institutions, while Mello e Souza (2008) similarly suggests that opportunities for grassroots leaders to network with other women leaders, especially those in formal positions of power, be made available. Interviews with women leaders in Mamirauá, such as Yaritza, who was able to travel

to another state where she was exposed to a large conference of diverse women sharing their experiences, revealed that these types of networking experiences can be transforming for women. Traveling to a regional capital, another state, or another country exposes these women to new ideas, provides social connections, and heightens their social status upon return to their home community, all of which contributes to the internalization of new cognitive images of women as actors with expanded agency. These experiences also create new cultural expectations as women interact with both men and other women in more egalitarian social-relational contexts as valued participants and respected leaders. However, structural enablement is also critical to opening new social-relational contexts where gendered interactions reflect greater parity. Clearly, without the necessary material resources provided, most women would be unable to participate in such events.

Women Leaders at Mamirauá³³

As mentioned earlier, this chapter draws primarily on interviews with twenty women from the Mamirauá Reserve. Some of these women were interviewed only once, while others were interviewed multiple times, on as many as six occasions in one case. Interviews with these women are supported by various formal and informal interviews with other Reserve residents including leaders and non-leaders, males and females. I also draw directly upon interviews from six Mamirauá staff members, one interview with the president of the Deliberative Council who is an employee of IPAAM, the

³³ The most active women leaders who became the focus of this chapter are introduced and described individually throughout this chapter. I discuss the number of leadership roles they hold and the factors that expand or constrain their agency such as social capital, familial and other social networks, and access to income, training, and in-kind support from managing agencies. I purposely do not reveal the locations of their villages to protect their identities.

state environmental agency with legal jurisdiction over the Reserve, and one interview with a male resident of the Reserve who sits on the Deliberative Council.

Women's involvement in organized activities in Mamirauá varies widely. I define non-leaders as those who may or may not participate in organized groups but who do not hold formal leadership roles. Women's leadership ranged from those women who might hold one formal leadership position in an organized group to others who juggle numerous such positions. There was also one perfunctory leader among my research participants.³⁴ The term *leader* refers to women who may have one or multiple leadership positions. Some of these women have substantial involvement in public life. The most involved women may hold multiple leadership roles; have created a reputation for themselves as strong, outspoken, civic-minded people; spend a significant portion of their daily efforts engaged in these public roles; and whose identity is defined to a significant degree by their engagement in public life. These are the career women of the Amazon. They are ones whose children are grown or who leave their small children behind to fulfill their leadership roles. These women are widowed or purposely single or have a supportive spouse. These women stand out. They are not constrained by traditional gender norms to the degree to which most women in the region are. These women speak in public, lead meetings, travel by day and night throughout the Reserve and to regional cities or other states, and juggle various public and private roles both to their benefit and detriment. Given the extent of the many Mamirauá Institute programs as well as community-level political structures, there are quite a few opportunities for men and women to assume leadership roles within Mamirauá. Interestingly, women are increasingly found in leadership positions within male-dominated programs such as fishing and forestry.

³⁴ Her case is discussed more fully in a following section on the importance of family networks to assuming leadership positions.

In this chapter, I examine how these women come to be in their positions of leadership and how they differ from other women. I also inquire about their motivations for devoting so much energy to public life when there is little if any monetary remuneration for their work. In order to do this, I organize this chapter around four questions: I first discuss the various opportunities available to women. I then discuss the factors that condition women's lives in Mamirauá and how these influence women's ability to assume leadership roles. Many of these factors manifest themselves as barriers to leadership and are discussed as such. I then address the ways in which the Mamirauá Institute may or may not assist women in overcoming the obstacles presented by these conditioning factors. The chapter concludes with a discussion of how the social structures that shape women's lives vary between the leader and non-leader categories. I demonstrate how the internalization of new cognitive images of women leaders enabled them to overcome the barriers to leadership. Last, I present suggestions for how conservation programming in the participatory setting might be altered to increase female participation and leadership.

Opportunities for Leadership in Mamirauá?

The various programs initiated by the Mamirauá Institute offer many opportunities for both men and women to participate and, to a lesser degree, assume leadership roles. Leadership and participation are closely linked since most often a person will first participate in a group and then, after some time, volunteer or be called upon to assume a leadership position. Generally, women who become leaders also have participated in programs. Participation then is a conduit to leadership.

The various opportunities for participation in Mamirauá Institute programs include the economic activities of ecotourism, artistry, managed fishing, managed forestry, sustainable agriculture, and microcredit. There are also health and education

programs. The political structure for management of the Reserve is supported through a community organization program. As described in Chapter 2, the Reserve is broken into nine sectors, each of which choose a leader and hold meetings every other month to discuss Reserve-related issues salient to their sector. Participation in these meetings can therefore be linked to participating in an Institute program even though the connection is not direct. This is because now that the sector structure has been set in place with local leaders taking responsibility for maintaining the meeting schedule, this local level of management is intended to be independent of the Mamirauá Institute.³⁵ At this level, there are sector meetings as well as the annual General Assembly meeting which offer opportunities for grassroots participation in management of the Reserve.

Another opportunity for local involvement is the volunteer enforcement effort. The Mamirauá Institute has created a volunteer patrol where Reserve residents are trained as enforcement officers and then patrol their own sector. This program is heavily male-dominated, but I did find one woman in Peixe-Boi who participated in this group along with her husband. There are no single women who patrol alone with the men, as it requires being out in the forest for days at a time. The one woman who does participate in the program only travels with her husband, and they often bring their small child along. The joint participation of husband and wife as well as the freedom to bring along a child make it possible for this woman to participate in an otherwise exclusively male activity.

There are also communication programs that include a community radio program and a written magazine authored by Reserve residents. These programs are discussed in further detail in Chapter 2 where Mamirauá Institute programs are

³⁵ However, the presence of Mamirauá staff at sector meetings is common, and they will be recognized as authority figures.

introduced. All of these programs offer opportunities for participation for both men and women, though they tend to target their populations based on the traditional gender division of labor. The introduction of all of these programs has also created leadership slots to be filled by group members. Often these slots are filled by the same few people, and some of these people are women who have found ways to overcome the constraints of gender roles.

The economic activities in particular are organized around a president or group leader. The local staff of the ecotour program has been organized into a labor union (AAGEMAR). This group is a legal association and has a president, vice-president, treasurer, and secretary. The president is Ana, one of the most active leaders. Her vice-president is a man. The treasurer is one of the women I categorized as leaders. The fishing co-op in Palmital, an initiative of the managed fishing program, has a female president, whom I categorized as one of the three most active leaders.

In addition to the economic activities, the political structure of the Reserve involves various levels of leadership starting with the community level and extending to the level of a Reserve-wide association. Communities choose representatives to attend sector meetings and the General Assembly, where they will voice their opinions and vote on decisions. The General Assembly, which is a three-day event, is also conducted by a number of local leaders who are responsible for keeping the meetings moving, making announcements, telling jokes, and generally being the organizational leaders of the event. These folks are trained and backed by Mamirauá Institute staff from the community organization program. Additional leadership positions include those for each sector, and most recently, a Reserve-wide association of Reserve residents has been established which is led by an elected, local president and vice-president. Finally, there are 12 seats on the Deliberative Council that are specified for Reserve residents. Since this is currently the ultimate decision-making body on

management of the Reserve, these positions are critical leadership roles. There are a number of female leaders who hold one of those seats on the Deliberative Council.

Another category of opportunity offered through the conservation effort are those paid positions created as an effect of the operation of the Mamirauá Institute itself and a few of the conservation programs. These jobs do not necessarily place people in positions of leadership, though some do, but they provide another form of participation in Reserve-related matters. Because this is a form of participation, I include these jobs as an opportunity that may influence a person's entry into leadership roles.

A number of different jobs have been created as a result of the implementation of the conservation program and the establishment of the Institute. These include operations and maintenance jobs for the Institute offices as well as the infrastructure inside the Reserve. The Ecolodge employs a manager and maintenance personnel as well as the various other positions necessary to run a lodge such as cleaning, cooking, and guiding personnel. The research houses throughout the Reserve each have a local caretaker hired to oversee the structure. There are local research assistants hired to assist scientists with data collection. These will be people who have special knowledge and skills necessary to gather foliage or fish samples or assist with handling dangerous wildlife such as caimans. Then there are also field hands who are employed by many of the programs and scientists. Field hands may be responsible for navigating and operating motor boats, guiding through the forest, cooking, and performing heavy labor. There are a relatively small number of managerial positions, but these include positions such as Operations Manager, who oversees the maintenance of all the Institute infrastructure, manager of all the field hands and boat drivers, and manager of the ecolodge. Last, there are also a very few paid enforcement positions as full-time enforcement agents.

Another opportunity relating to leadership is opportunity for trainings. Through listening to people talk about how they became comfortable assuming duties that are part of their leadership responsibilities, such as public speaking, often trainings were mentioned as having an important role. Through the community organization program, workshops specifically designed to capacitate leaders are offered. The Mamirauá Institute also hosts many other capacitation workshops. Each of the economic alternative programs offers trainings and skill-building workshops particular to the program's activities. The artisan program, for example, has brought experienced artisans from other regions to teach Mamirauá Reserve women to weave baskets, carve wood products, or employ a specific process for firing clay pots. The forestry program will teach participants to use technical equipment, techniques for surveying a forest plot, and how to identify trees that are legal to harvest. The Institute also offers other types of trainings such as gender-awareness workshops. All of these trainings capacitate participants and add to their ability to internalize new self-images and perform leadership duties. This internalization process is critical to women's adoption of leadership roles, as capacity-building workshops create new normative gender roles and alter both men and women's cognitive images of women's capabilities.

The last category of opportunities that I identify as important in the making of local leaders is opportunities for travel and cultural exchange. There are a number of opportunities presented to local leaders and program participants for travel. These vary from traveling locally to regional cities for meetings or trainings to attending fairs in the state capital of Manaus and even traveling to other Brazilian states or neighboring countries. One of the female leaders traveled to Peru to attend a meeting about the status of women. Representatives from Mamirauá have been taken to the adjacent Amanã Sustainable Development Reserve, a reserve that is modeled on Mamirauá, to

speak to local people in Amanã about their experience participating in the management of Mamirauá. Then there are also examples of outsiders coming to Mamirauá and bringing their distinct views and experiences to the people of Mamirauá. This occurs regularly through the ecotour program, where foreign tourists mingle with the staff at the ecolodge as well as make a visit to one of the local villages. Each village that hosts the ecotourists has several community guides who will accompany the group through their village, so these individuals have the opportunity for regular exchange with foreigners, though it is generally limited by language barriers. There are also numerous foreign researchers and visitors related to the management of the Reserve who visit and have the opportunity for exchange with locals.

The Power of Structural Constraint

In this next section, I focus on the role of material and social structures in the reproduction and transformation of gender. Through listening to these women's stories and observing them in their everyday activities, I was able to identify a number of factors that condition their ability to participate in natural resource management activities and assume leadership roles. Not only did I want to understand what structures affect women's ability to rise to leadership positions, but I also wanted to know in what ways the natural resource management program assists, hinders, or fails to affect women's ability to overcome the challenges involved in gaining access to leadership positions. In the following section, I discuss the structures that condition women's lives and how the conservation programs alter or fail to alter these structures. In doing so, I examine to what extent the programs affect women's ability to rise to leadership. In Mamirauá, both material and social structures affect women's agency. Some of the most important structures that shape women's lives include geographic

isolation, the physical environment, power dynamics between spouses, and norms regarding the gender division of labor. Others include employment, income, education, training, technical assistance, cultural exposure, opportunity for self-organization, access to capital, and organizational structure of the Reserve. The presence of IDSMM has affected each of these structures in limited ways, mostly indirectly and informally, though there are also examples of direct, purposeful, institutionally sanctioned efforts to ameliorate some of the barriers to women's leadership.

Geographic Isolation and Physical Environment

Many of the barriers facing the women of Mamirauá are similar to those faced by rural women throughout the world, as documented in the previously mentioned literature. However, I found that geographic isolation is one factor that greatly influences the possibility for women's organized activity in Mamirauá, yet has received little attention in other studies. The distance a woman lives from the NGO base in Tefé and the sites of program activities within the Reserve has a big impact on her ability to participate.³⁶ Travel is a major limiting factor because of the difficulty, danger, and expense of navigating the flooded landscape. Though the Mamirauá Institute has been progressively reaching out farther afield with its programs over the years, the communities closer to the southeastern tip of the Reserve have historically experienced more program activity simply by their strategic location. Peixe-Boi, for example, receives daily visits from people associated with management of the Reserve

³⁶ Despite this assertion, which is presented as one of the findings of this chapter, two of the main women leaders discussed in this chapter, Julia and Leticia, come from remote villages and continuously overcome the challenge of distance as they enact their leadership roles. Leticia's village is located about halfway into the Focal Zone on its eastern border, whereas Julia's village is at the farthest reaches of the Focal Zone. I assert that though isolation is a powerful constraint to enacting leadership at the Reserve level, these two women have sufficient access to other enabling resources to overcome this constraint.

due to the fact that it is located at the mouth of an important waterway. Even when many of these visitors stop over simply to take a break on a long journey, Peixe-Boi community members receive benefits from the encounter through news and the opportunity to network with these passersby. The communities that are closer to major waterways and urban centers have the added advantage of greater access to the limited public transportation, which is available only on the major waterways that border the Reserve. Since there is quite a bit of travel between Peixe-Boi or Nova Vida and Tefé, Reserve residents from these nearby communities do not have as far to travel and can often obtain *coronas*, or hitch a ride for free. This common form of transportation becomes much more difficult to obtain farther out in the Reserve. Also, it is common for Institute staff to provide free rides to Reserve residents who are traveling in the same direction but less likely for a person to obtain a free ride from another Reserve resident. Rides obtained from another Reserve resident might involve a fee. Also, farther into the Reserve, encountering Institute boats becomes less frequent. So again, people from the more distant communities have farther to travel to program activities, have less opportunity for rides or public transportation, and are more likely to have to pay for a ride they do obtain. Gas is extremely costly in this region, and most families will at most own a very small gasoline engine by which they may power a wooden canoe. Each trip to town is costly both financially and in regard to the time investment. Another factor travelers consider is the physical environment and the dangers inherent in navigating through the Amazon flooded forest. Gas is hard to come by in the Reserve, and waterways are often shifting, so one must be familiar with the landscape and be sure to plan carefully the amount of fuel necessary to reach one's destination. Caiman are very common and can pose serious threats to people traveling by canoe or other small craft. During the fieldwork period for this research, various accounts of caiman attacks were broadcast on the radio news or by word of mouth. In some cases,

these stories involved loss of appendages or even life. The weather is also a major consideration, as thunderstorms can be life-threatening if traveling by water, especially by the small aluminum craft so commonly used by the Institute staff members. One IDSM staff member relayed a story of how inclement weather kept women in particular from making it to the 2006 General Assembly.

The condition of the boats used for transport is also a factor affecting the speed and safety of travel. Gasoline engines may not be reliable, leading to breakdowns in mid-river. Julia, one of the leaders, told me a story of leaving her home one morning to attend a meeting in a nearby urban center. She was traveling by public transport on a large river boat when it broke down. Eventually, another boat picked up the passengers and delivered them to their destination, but not until 2:00 a.m. that night. Tefé, for example, can be a rough environment for a woman to find herself alone or with small children in at that hour. As one of the last urban centers in western Brazil before reaching the Colombian border, it is known to support illegal drug trade. Stabbings and other forms of violence are not uncommon at local bars. Years before, one of the women leaders in my study had been the unfortunate victim of a terrible beating in a nearby urban center when she was assaulted in the street alone after dark. All of these potential hazards of travel pose more of a deterrent for women than for men, not only because of the obvious advantages of greater physical strength and greater knowledge of water navigation due to the male fishing occupation but also because of normative restrictions for women.

Though the daunting physical environment and size of the Reserve present constant challenges to travel, IDSM makes a number of efforts, both formally and informally, to assist locals in dealing with these obstacles. *Coronas*, or hitching rides with Institute boats, is a common way to get around the Reserve, especially for residents who are active with programs and know the staff well. There is a norm of

reciprocity between IDSM staff and Reserve residents. One way staff members win favor with residents is to provide free transportation. This is at times done even when the staff member was not previously planning on going to the desired location. They will at times drive residents somewhere if it is deemed important. On one of my first stays in Peixe-Boi do Mamirauá, I had just finished unpacking supplies after my arrival when Ana appeared asking for a ride to Nova Vida, explaining that she had some important business there. I had not been planning on going to Nova Vida that day but needed to go there eventually. This seemed like a good opportunity to offer Ana something she wanted and simultaneously benefit from her familiarity with the community by arriving with her, so we made the excursion. She was able to conduct her business and then also introduced me to an important family from the community that I was then able to interview. On another occasion, I was traveling by river in one of the IDSM aluminum boats when we came up to a group of men in what was clearly an overloaded wooden canoe. They were moving very slowly, and before I knew what was going on, my boatman had pulled up to them. He offered to take several of them in our boat to the next community, so in a flash their boat was lightened by two. This type of favor is so commonly offered by IDSM staff to locals that my boatman didn't even think to check with me but made this offer himself. It is one important method by which IDSM is able to obtain support and goodwill from Reserve residents.

Another way that IDSM offers assistance with transportation to locals includes reimbursing travel expenses for Deliberative Council members when they attend meetings. However, not all members were aware that they could receive money for their travel expenses. Ana, who is very actively involved in Reserve matters and who studies all the official materials presented to her as a Deliberative Council member, explained to other members that they were eligible for this reimbursement.

Previously, transportation to the annual General Assembly was supplied by IDSM. For years, one or two of the three large IDSM river boats used to make a circuit around the focal zone, picking up representatives from the nine sectors and various others who were interested in attending the three-day meeting. Three years prior to the data collection for this study, IDSM began to transfer the organization of the General Assembly over to the local people. This transition included the cessation of free transportation to the meeting. People now travel independently, which costs money and deters participation, but there is more autonomy as well. Reserve residents are no longer dependent upon IDSM for transportation, so they can attend the meeting for the length of time that suits them opposed to waiting for the IDSM boat to deliver them home after the full three days.

The difficulties Reserve residents face in dealing with distance are also ameliorated by the radio system put in place by IDSM, which allows for communication between research stations and the main headquarters in Tefé. Each of the nine research stations houses a radio connecting it to at least some of the other stations and usually to the operations base and headquarters in Tefé. These radios are meant for official business only but often are used for a variety of purposes by both staff and locals. Locals, especially those who have established a working relationship with IDSM staff, will go in to a research station and pick up the radio without hesitation or asking permission. The norms of use do not demand that they would do otherwise. Some communities without a research station also have radios for community use, so people in these locations are also connected to the IDSM radio network. The radio is a critical component of the ecotour program, as this is how staff for the ecolodge are procured each week. Ana, as the president of AAGEMAR, is responsible for lining up the necessary number of workers each week, depending on how many guests are expected at the lodge. She will do this by calling nearby

communities on the radio with her requests for staff. All of this business is completed by radio communication. Countless other tasks are completed via radio, including arranging transport for both staff and locals. Use of the radio ameliorates the impact of the great distances and lack of transportation options for locals.

So, in various ways, IDSM affects residents' mobility within the Reserve. However, *coronas* are an informal type of assistance, and these benefits are enjoyed by some much more than others. Those who are more involved with Institute programs, who have established relationships of reciprocity and friendship, and who live in more highly trafficked areas are more likely to benefit from this type of assistance. This also applies to any assistance provided by use of the radio system. These forms of assistance, however, do not change the lives of the many women who are not currently involved in programs, who don't know IDSM staff members, or who live in isolated communities. The presence of IDSM has not had much effect on the cost, dangers, and effort involved in undertaking travel for most women in the Reserve. The assistance with travel through reimbursements for Deliberative Council members, the previous transport to the General Assembly and through *coronas* is only a drop in a very large bucket. Women and their children need a safe way to travel to programs if they are going to participate away from the community. This issue has not been sufficiently addressed. Of course, additional resources would be required to tackle this problem, but it is one factor that needs to be considered when attempting to bolster participation, particularly female participation. Public transport would help.

Gender Relations and Travel

Women are responsible for the care of small children and generally will bring them along if they travel, so any decision to travel is made while considering the safety and convenience of traveling with children. Male travel is much less confined by the

presence of small children in the family. Men are also not restricted by gender norms when it comes to travel. It is not uncommon for men to leave the community for days at a time to fish or to conduct some form of business elsewhere. Women are much less likely to travel any distance without their husbands. Not only do they need to physically hold on to their small children while in the boat, making it difficult to drive or paddle themselves, but their husbands often frown on women traveling unaccompanied. One Institute program coordinator recalled a story during our interview. She mentioned that she had difficulty in getting married women to travel overnight for training workshops unless their husbands were also a part of the program and would also go along. When I asked this program coordinator if she thought men and women in her program make decisions equally or if one sex has more decision-making power, she told me a story about planning an exchange trip to another state with program participants:

I think that it's the men. They decide. And the women opine. But not always even this is considered and neither is their opinion always asked for. . . . One time we were planning an exchange to take some of the farmers from our program and bring them to Rondonia for an experience that would be really interesting. We had funding to take ten people and wanted to take five women and five men to have a balance and we had enough men and women for this. We had a situation that was funny. There was this woman who is one of our assistants. She collects data about what people plant, and sell and eat. We wanted to take her but her husband wouldn't let her go. And she didn't go on this excursion.

When I asked whether the other women went, she responded:

They went. But the situation was that one went. Her husband went too but only because we were there and he didn't have the courage to 'break the stick,' that is to say, it was a very big confrontation. Then when she was there, the husband was there at the shore with this 'huge face' and she was beside herself. She couldn't breathe or talk with anyone for fear that her husband would know that she was talking with other people. You see, relaxing. . . . She couldn't because she was afraid that someone would tell her husband that she had been relaxing. . . . Three women went. The other one was single, a young

woman without kids. She didn't have any of this, no husband . . . and her brother, who was also one of our assistants was going, so she was with someone from her family, even though she was young. And the last was someone who could have been one of our technical assistants. Her husband is a person who is very clear, just as she is. They have lived in Manaus and all. Today they live in the Reserve but they've already seen lots of things from other places. They have a very tranquil relationship. That is an exception. (*Agriculture Program Coordinator, IDSM*)

So in the end, the program coordinator could not convince five women to attend but only three, and one of their most active female participants, who worked as a technical assistant for the program, was not allowed to go by her husband. Women who live in more isolated locations have greater hurdles to overcome in order to be able to participate in any organized activity based outside their own community because of the challenges distance presents. In addition, gender relations present more restrictions for married women with children than for men, single women, or married women without young children.

As mentioned earlier in this chapter in the story about the agricultural training excursion to Rondonia, there have also been accommodations made for both husband and wife to travel together to events away from the community as an effort to increase female participation and win male support for program activities. I also observed various cases of spouses working together in traditionally male activities. This seems to be a way for women to enter these male-dominated activities with the support of their husbands. One example of this was a young mother in Peixe-Boi who became a volunteer enforcement agent. This job involves patrolling the regional waterways, often at night and for up to a week at a time, and presents both natural environmental hazards and those potentially resulting from confrontations with illegal fishermen. Yet, Tania participates in this program with her 8-year-old daughter and husband. Sometimes the daughter is left behind with family members, but other times she is brought along. Tania would likely not participate in this program if she were not

allowed to bring her daughter and if her husband did not also accompany her. In her interview, she said that she does not go into the forest without her husband or some other male. Other examples of this include Lana, president of the Peixe-Boi forestry group, whose husband is also a member, and her sister, Eliana, whose husband also participates. Julia is president of the forestry group in her community, and her husband is her vice-president. Leticia and her late husband were a team who always traveled to meetings together while he was alive. There are also numerous examples of couples who work at the ecolodge where the husband's support for his wife's involvement is bolstered by the fact that he is also personally involved in work associated with the Reserve. Because the work setting and people are familiar, the husband is often not far from his wife, and his family's income is increased by her salary, his support is won. This accommodation of husband-wife teams makes it easier for husbands to accept their wives' new roles, which by nature involve greater mobility and independence than they otherwise would have. For example, Yaritza is a cook at the ecolodge who discussed how her husband was not initially supportive of her employment; however, he also works for IDSM. He works as an enforcement agent. His daily wage is half of what Yaritza earns, and since she is very successful at her work, she is offered work frequently. Yaritza attributes the "winning of her freedom" to the fact that her earning capacity is twice that of her husband's.

Children

Gender relations and the traditional division of labor not only affect women's ability to travel to participate in programs outside their communities but also affect women's activities closer to home. The age and number of the children a woman has to care for is also critical. Tending to small children is labor-intensive and often results in women staying closer to home. One woman stated that she dropped out of an artisan group

because the work involved gathering the materials used to make their clay pots required trips into the forest that were too long to walk with her two small children. She left the group after six months because the work was too hard to do while watching her two children.

Though it is not uncommon for women to bring their children to public meetings, multiple women, like Julia, also expressed hesitation about bringing children to public meetings because of the difficulty of participating while trying to keep them quiet and still. One program coordinator mentioned that if a child is crying in a public meeting with both parents present, it will be the mother who leaves with the child while the father stays and participates in the meeting.

Another one of the major factors shaping women's lives is motherhood and the degree to which a woman has support in caring for their children. Girls who have children in their teen years have little opportunity to continue their education, since most villages within the Reserve offer schooling only through the elementary levels. For young people to continue studying into the secondary level, their families must send them to live in one of the neighboring urban centers like Tefé or Alvareãs. This is unlikely to be an option for a teenage mother with the responsibility of caring for a newborn child, even if family support is available to some degree. Family support, however, is critical in determining the possibilities for mothers in general.

Women of any age with young children will be limited by their parenting responsibilities and their options for other activities determined by their ability to either bring their children along or find assistance with child care, usually through other female kin. Women in Floresta, Julia's village, are limited by their isolation, lack of opportunity (for education, work, even access to markets), the young age at which they begin motherhood, and the lack of spousal support in child care. There are some ways in which the conservation programs relate to these factors that shape women's

lives. Activity in productive groups, like attendance at public meetings, tends to be limited by small children. The program most accommodating to women with small children is the artisan program, particularly those groups specializing in producing jewelry from seeds, since most of the work is done in the home, where women can simultaneously attend to their children. However, the various artisan groups throughout the Reserve focus on different types of crafts, some requiring more intense physical labor such as the group producing clay pots. So the level of women's participation is influenced by the type of work involved in creating the various products. As with the woman who quit making clay pots, obtaining the raw materials for craft products can be unmanageable for women with small children who do not have assistance in gathering raw materials. Finding seeds to make jewelry requires venturing into the forest, but now that the Artistry program is established, many husbands see the economic value in their wives' work and will gather seeds for them while out on fishing excursions. The rest of the process can be completed in the home where children can be cared for simultaneously. In this example, we see that the structural change of creating new economic opportunities elicits interactional change between spouses as the scope of their social relations is broadened to include increased economic cooperation. Women's empowerment to earn income and their membership in organized groups supported by the management agency creates more equitable social-relational contexts where spouses interact with greater parity.

The other economic programs most likely to involve women include ecotourism and agriculture.

The ecotour program involves equal numbers of men and women staff members, though their roles are structured by gender. However, the women who are employed at the ecolodge are almost exclusively women with children old enough to be left behind with family members for days at a time. Children are not allowed to

accompany their mothers to work at the ecolodge, with the exception of the person who cooks for the guides. Ana was the *governanta*, or caretaker, of the lodge for four years but had to leave due to the conflict between her work responsibilities and motherhood. She was allowed to return to work after the birth of her son, and she brought her young cousin to care for the baby while she was busy. Still, the baby needed to nurse and would cry for his mother. After repeatedly being chastised for attending to her son, she decided to quit. The two responsibilities were not compatible. Today, the guides' cook remains the only position at the ecolodge that accommodates mothers with children, which is allowed because this cook stays in the guides' house and is separated from the tourists. So, with the exception of the guides' cook, all the positions at the ecolodge require a mother to leave her children at home with another care provider. Women who have older children will often leave them with another family member for the week or so they are on duty at the lodge, but women with small, nursing children do not have this option, so they are excluded from participating in this program until their children are old enough to be left behind for at least several days at a time. I use the term "older children" in reference to children as young as four years old. My neighbors in Peixe-Boi would routinely leave their four- and five-year-old sons for up to a week at a time in order to earn money at the ecolodge. When evaluating the effects of this program on local families, this is a factor that should be taken into account.

The agriculture program does not impose this type of exclusion for mothers. Women do not need to be separated from their children in order to participate in agricultural production, but the nature of the hard physical work is more difficult for women carrying babies and small children. I did not hear of any accommodations made by the program specifically for mothers needing assistance with child care.

Women's participation in agriculture, as with the other programs, would very likely be increased if the issue of child care was addressed in some way.

Ana provided an example of a training that had a high degree of female participation. Despite the workshop requiring a week in an urban center just outside the Reserve, many women attended because they were allowed to bring their children. Some of their husbands and other male kin attended as well. In an interview she described this training:

Ana: We were almost not going to do the course. Then we began talking to the secretary. 'We have children, to leave the house, we are all mothers of families, to leave and study in the city is very difficult. So then, we want a . . . how are we going to do it?' Then he said, 'No, no. There is no problem. A boat will come and pick you up. We have a house where you can stay. We have food, and when it's the last day, we will take you home. Don't worry, no . . . Whoever wants to bring their children, can bring them. There is no problem.' So we went . . . all of us. We all brought our children.

Kayte: to study in the university?

Ana: No, it was in Alvarães . . . this past July. It was a class, of 15 days . . . 12 days.

Ana: All the mothers brought their children. It was class. It was child . . . it was (laughing) a *meninada* there! (a whole lot of children).

Kayte: So are there men who are studying still?

Ana: Yes, yes. There is Iran. There is Ari . . . o Elcio. Paulo is already finished. But there is Stefan and Franquinei, still there are some . . . There are a bunch.

In addition to being allowed to bring children, they were also transported to and from the training site, as well as provided housing and food. Women's participation in all programs could be obtained more easily if there were more efforts made to assist with child care, safe transport, and financial support to defray the costs of food and shelter. Obviously, this requires financial resources that may not be

available to an NGO, but this example illustrates how female participation can be encouraged by offering some of the assistance that was offered for participants of this course.

Gender Relations in Marriage

A woman's marital status and relationship with her husband if she is married, as illustrated in the previous anecdote about the agricultural training trip to Rondonia, is a critical factor in determining her autonomy. I asked the Director of Natural Resource Management and Social Development, who is also the Coordinator of the Community Development Program, whether men or women have more power in the Reserve communities. She has been working in the Reserve for over six years and oversees all the economic alternative activities. She laughed as she responded:

It's obvious. It's the men, no? If we were to evaluate in the community meetings . . . Geez! It's practically only the men who go. In the assemblies, the majority are men. In some areas where we've worked, for example, in the Mamirauá and Palmital Sectors, . . . I think in these areas we have worked more intensely in relation to gender . . . so in these areas where we have discussed this more in our work, the women participate more. So today, for example, we have a woman who is president of a fishing association (which is Dona Leticia).

She goes on to discuss how gender relations are critical in affecting women's participation and how IDSM has made a difference in the areas where they have worked intensely:

They (IDSM staff) have studied a lot in Nova Vida, in Palmital, in the end you can see the results. Where the work has been more intense, you see a difference. Where we have not succeeded in working much, this thing of male domination is very big still, in particular in the community of Aracu, it's very . . . a very specific case that has a case including a man who has two or three women in the same community. So, they live in different houses, but they live with it. So, this thing of male domination in some areas is much stronger

than in other areas of the Reserve. The men think that the women are their property. And the women also see themselves as property of the men.

She describes how the women might respond if invited to join a meeting:

No, I will go ask my husband. If he lets me, I will go, no?

She goes on to say that it's different in the Mamirauá Sector, in Peixe-Boi, in Nova Vida, (also) in Palmital. (There) they say:

'No, I will go.' They don't have to ask their husbands any more. But in other places they have this thing of 'I will ask my husband to see if he will let me.' Not just in Aracu, but in other places as well. So the relation of dependence and male dominance that they have is very strong.

The Coordinator of the Ecotour Program spoke about the power differential between men and women as well. She said that men clearly have more power, citing the example that "women ask their husbands if they can go someplace. You never see a man ask his wife if he can go anywhere."

Dona Beatriz, who is 74, is held in high esteem as a local leader of Nova Vida, a village in the Mamirauá Sector. I asked her about her husband's reaction to her work:

Kayte: What does your husband think of your participation as a community guide, your work as a midwife, your work with the artistry group? Does he like that you do this type of work or not?

Beatriz: He likes it. He doesn't stand in my way at all with the work that I do. He helps me with everything. He orients me at times as well which is good, no?

Out of the three most highly active female leaders I identified, one was widowed, one was single, and one was married to a supportive husband. None of these women were impeded by a domineering husband. The woman who was widowed had been married to a supportive husband who was one of the men instrumental in making

the Reserve a reality. He was known as a great leader throughout the Reserve, and his wife accompanied him to the many Reserve-related functions. She spoke of how she had learned a great deal from him about how to be a leader. After he died in an accident, she later was asked to assume his position as leader of the managed fishing program in her community. She then began to take on a more active role in Reserve-wide issues, continuing the work of her late husband. He had been an asset to her leadership development through both his own interest in park management issues and his support of her involvement. But it wasn't until he was gone that she really took the spotlight and filled in the space he previously held. The government official who is charged with overseeing the management of the Reserve and who regularly attends the Deliberative Council meetings described Dona Leticia as "an outlier" but someone who was "more in the background before her husband died." He said, "It used to be that if you went to Palmital, you spoke with Seu Andreas (only)." Having a supportive husband who was a leader himself made it possible for her to participate in many activities, but becoming a widow made it possible for her to become a leader who stands out in her own right.

Another of the most active leaders, Ana, is single, and though she expresses that she'd like to have a life partner, she is very protective of her freedom. Though she has had one child, she remains single so as not to risk losing her independence to a domineering husband. She says she would only marry if she found someone who "thinks the same as she does." She said:

There are people who want to be with me. I don't want that myself. I have a boyfriend, but . . . no . . . I don't want. I don't want. He has to have a lot of patience because I travel a lot.

A third female leader, Julia, is married with five children. Her public roles include president of the forestry group, vice-president of her community, sector leader

for the Aranapu sector, and Deliberative Council member, and she works to improve children's health with the Pastor da Crianca group. She also works as a cook for the school, a role undertaken on a rotating basis among various women in the community. She was also a teacher for many years but no longer holds that position. In one of my interviews with an IDSM staff member, she was referred to in good humor as "the woman who yells." She has developed a reputation throughout the Reserve and is known as a *barulheira* or "loud woman," a term that was used as a compliment.

The first time I met Julia was at a sector meeting being held in her community. It was Julia who set up the chairs inside the community building. I noticed how when new people came to the door throughout the meeting, she would rise and bring them a school chair (with desktop attached), lifting it over the other seated people. It was like she was the hostess at a gathering in her home. She was clearly an insider wanting to make sure that others were comfortable and felt welcome. She addressed the group with confidence and without hesitation throughout the meeting. In my field notes I remarked, "She moved around easily in front of the group, often laughing and smiling, appearing at home." Interestingly, she presents a stark contrast to the other women in her community, who gathered together with their children on the floor in the back of the room. The men were all seated in chairs or on benches in front of them, so not only were they segregated and more distant from the locus of conversation, but they were seated on the ground below the level of the men, where their vision of the group was obscured. Julia sat in a chair in the midst of the men. Without yet knowing anything about who Julia was, I described her participation at this meeting in my field notes:

Julia spoke as much as any man. In fact, she may have been the most vocal participant after João (an IDSM extensionist who was running the meeting). A second woman, Fransica, also spoke but not nearly as much or as freely. She raised her hand on various occasions but this was ignored. If one wanted voice in this meeting, one needed to be assertive, to speak up, and often times

dominate the room with a loud voice and by leaving no pauses where someone else could step in. Julia did this with ease. (*Field notes December 17, 2005*)

Though Julia has five children, motherhood has been very different for her than for many other women in her own community. She describes the restrictions that family responsibilities have on many women due to gender roles that designate women to be almost exclusively responsible for child care. These restrictions pose serious challenges to participating in organized groups, to travel and to leadership opportunities.

. . . there are many husbands that don't stay home. Many of them say so themselves. When the husband gets home, he says, 'Ah, I won't stay home so my woman can vagabond. I won't stay.' So, this is a difficulty, right? . . . that us women have. And here, in this community where I live, almost, almost every year there is a child so there is no way. (She laughs) . . . One in the arms, another in the belly, those others all small . . . so it's difficult. . . . It also depends on having many children. Children. Here you have a small child, others have nursing babies, we have many in my community. Many children. So, they (mothers) can't go, because if they go, the fathers won't stay with the children. They don't want to. Don't have a sister to watch. So (the women say), 'I don't go because my children won't let me.' There are many things a person does where you can't have children in the middle. So that's the problem as well.

. . . it's very difficult for them because they don't know how to travel without their husbands, you know? The husband doesn't know, doesn't know how to stay home (with the children). And so they only go if he goes, and that makes it difficult for someone to have a leadership position, to travel with husband, children, and everything . . . it doesn't work. There's no way.

In contrast, Julia's own experience with motherhood has been very different. Her children, the youngest 10 years old at the time of interview, are all now old enough to be left alone or with family for periods, so they do not constrain her ability to travel or participate in activities. But even when they were very young, her husband's support of her involvement in Reserve issues and other activities such as pursuing her own education allowed her freedoms that many women in her

community do not have. She recalls some resistance with her husband early in their marriage, but she eventually gained his support for her leadership activities as she convinced him that her involvement would help secure a better future for their family. She described the tension with her husband over traveling and how he ultimately supported her:

I never had difficulty like that. He didn't like it that I left, right? . . . but he also never impeded me. He never said, 'No, you won't go today.' One time Seu Paulo (a respected IDSM staff member) arrived at five in the morning. The boat, the motor stopped at the shore, and I said, 'It's Seu Paulo.' I had my bag packed and I said, 'I'm going now.' So the children are staying at home. And he (her husband) said, 'It's true. It's very difficult to stay at home, like this. . . . other people arrive, take your wife, and leave.' I said, 'It's very difficult, yes. But I have to go.' (She laughed). And I left with Seu Paulo. I've never had difficulty, like that. We have never been husband and wife who fight, saying bad words to one another . . . never was cause for this. . . . When I began to work, to help, to travel with the personnel, the personnel of the Institute, I had small children. But I never . . . the father always stayed home. He stayed. Stayed. One time he stayed with one of my children when he was one year old. I had a meeting in Tefé, and I couldn't bring the child, because you can't have a child there, right? . . . in a meeting in the Brother Falco Center, full of people, over a hundred people . . . for me to have a little child . . . what would I do? My husband stayed with the child at home. He stayed there for five days and when I finished the meeting, I went home. It's always like that. A major difficulty for women of the interior have is this, children. They get in the way a lot.

I asked Julia whether it was hard at first for her to travel when she began venturing away from her community at age 19. She said:

No. For me, no. It never was difficult for me. (laughing). Many people admire this, no? I never had anything difficult like that, because . . . I went . . . I left (the children) . . . and he (husband) stayed, you know? . . . for four days he stayed with the baby who was one month old. He stayed all day. He went with me to Fonte Boa. He cared for the baby, and I spent the entire day studying. I'd come home at 8 o'clock. He would care for the baby.

At another point in the interview, I asked Julia how she dealt with caring for her children and pursuing her activities. She recounted:

When I went to the training there, I brought them along . . . only my husband came too. He stayed in the house of our cousin with the baby the whole day. I'd come home at 7 o'clock at night. So it was he who cared for the child for two weeks. He watched during the day and I only watched at night. The child was really young, only one month old.

I asked what her husband thought of this:

(Laughing) He thought, had to think, it's for our future, no? . . . ours and our children and he had to help me in this way. Always, he has helped in this way. Always he helped me. Never has he been a father who said, 'No, don't go somewhere. You will stay.' I think because of this I haven't had difficulty. But for them (the other women) it's difficult because of this. Because the husband doesn't trust them and won't stay with children. If she goes, she has to take everyone. And there are mothers in my community who have eleven, twelve kids, no? . . . it's difficult.

Julia is a stark contrast to the other women from her village that I interviewed in a focus group. These women do not participate in activities, rarely travel outside their own community, and are severely constrained by family obligations, many children, and domineering husbands. While discussing the characteristics of a "good husband" and "respectable man," the women began to tell their stories of difficulty in their homes:

. . . the other thing is when the husband comes home running . . . and hits the children, makes them cry. This my husband already did with me. When he got home, I ran to the forest with my children. But now he doesn't do this anymore. (Still,) he is awful with me, really awful.

Another woman added:

Mine isn't drinking any more. He came home once, like this . . . drunk, no? . . . He hit me. But he wouldn't let me leave for the party . . . not even with the children that were born to him.

One woman described respectable as ". . . men who don't drink, don't hit women . . ." while another added her story of a volatile husband:

It's worse when he breaks all the glasses that we have in the house. The glasses, *puxa!* Finishes everything. Plates, no? Finishes everything. What I do is buy everything new. When he is better I say, 'you're going to buy the same glass that you broke. You're going to buy them new for me.' Buy again. Then never again did he do this. I said, 'You going to stay drunk, or raise your kids?' I don't know. I think he thought it was better to raise his kids, because like this it's not going to work, no?

A third woman added:

Thank God I don't have this problem of a drunk husband. He has other, other defects, other than the defect of drinking. The defect of jealousy. The defect of jealousy and fighting. He doesn't like to drink at all but jealousy is a problem.

He wants to kill. It seems everything in life is OK, then at times he's jealous and he gets . . . just fights. I can't go anywhere where there are other men, people dating (men and women socializing). I can't even talk with a friend who arrives, who is known for a long time, can't even talk, nor give a hug, no? Can't.

I asked if the men are free to talk with other women.

. . . depends on the man. They have liberty. For them, they want to be free. Now in the case of the woman, that's another story. With men, they have the right to play soccer, to go where they want, and he goes. With us, it's difficult. Because he says, 'You can't go because you have a mountain of kids.' It's the first thing they say. And them, no. They want . . . even if they're not, they're single.

I asked about the age when it's good to marry. Several women chimed in:

Maritza: Today there isn't an age any more, no. It's true.

Lozita: Today no. Before, a girl could get a husband at 25 years. With twenty. Today, there isn't an age. They don't get married, but they get the children. As young as ten years old, already, already . . .

Maritza: Already can . . . yep . . . ten, eleven years.

Lozita: It's late, no?

Maritza: Yes, late.

Manuela: At times they have twelve years and are already a mother.

Maritza: Yep.

The women discussed how they are strapped down by starting families so young and having so many children. But their options are very limited. They seem to view becoming pregnant at a very young age as just a fact of life, regardless of whether they marry. This is an example of the constraint on agency created by internalized cultural expectations combined with lack of access to material resources. These girls and women have little power to contest the existing gender structure. They don't have an alternative cognitive image to choose from, and if they did, they aren't equipped with the material resources and technical knowledge to adopt this alternative vision of life without early and numerous pregnancies. Women's stories in Mamirauá describe child-rearing as the sole responsibility of mothers. When there is little or no cultural expectation of men to take responsibility for the care of their offspring, and girls and women have no means to avoid pregnancy, inequality is further entrenched as girls and women are locked into decades of constraint as primary caretakers and at times, sole providers, for their children.

This community offers a contrast to communities more actively involved in the NGO programs elsewhere in the Reserve. As the conversation continued, the subject of contraception arose. In this community they do not have access to contraceptive hormone shots, which are available to women who live closer to the urban centers (such as the Mamirauá Sector). They talked about their fear of the one option available to them: sterilization. Various women voiced a desire to have the operation so that they would have no more children, but they told stories of women they knew who had suffered complications due to the surgery. They are afraid. At this point in the

conversation, Ana then pulled out a pack of oral contraceptives to show the group. They were unfamiliar with the idea. Ana, one of the leaders who lives in the Mamirauá Sector, has a good deal of interaction with outsiders, and travels to the urban centers frequently, had knowledge and access to life-changing medications that these women did not have. Though Ana comes from a similar social background to these women, her life chances have been altered by the creation of the Reserve and the introduction of the management programs. Ana's current life is substantially different from those of the women I interviewed in this village and is a result of altered gender consciousness combined with instrumental capacitation, interactions in new social-relational contexts where cognitive images of gender relations promote equality, access to material resources, and structurally enabled opportunities. Ana and a handful of other women leaders show us that when gender structure is altered at individual, interactional, and structural levels, individual lives can be transformed substantially. I argue that this does occur at Mamirauá, however, in a rather erratic and incomplete manner.

There is clearly institutional interest in women's well-being and participation in programs. Though there have been some explicit efforts to address how women's participation is affected by local gender norms, such as power differences between men and women and inequities in child-care responsibilities, these efforts have been for the most part dependent on the attitude and approach of the individual program coordinator, i.e., not a result of Institute policy. While interviewing program coordinators, I asked each of them whether their program had greater participation from women or men. I also asked how decisions within the group were made between men and women. Both the fishing and the agriculture program coordinators stated that men are dominant in speaking and decision-making but that the program staff make efforts to engage women.

The agriculture program coordinator discussed how their female participants see themselves, how they participate in relation to their husbands, and how the IDSM staff work to involve the entire family:

We work a lot for the rights of the farmers, the right to a retirement, the right to have a maternity salary for the women farmers. Because many times you will arrive in a community and begin to converse, 'Look, what is your profession? What is it that you do?' (The female farmer responds,) 'Ah. I don't have a profession. I don't do anything.' And when you go to see, this woman, she has planted since she was a little girl. She was always a farmer but she doesn't have an understanding of her state. Many times she doesn't have documentation. She doesn't have identification, doesn't have a CPF (identification card) . . . doesn't have anything. So it's like this, this the law guarantees. So, we go about helping with this; we have this type of extension work. (*Agricultural Program Coordinator, IDSM*)

When I asked the Agricultural Program Coordinator whether her program has more contact with or effect on men or women, she discussed how men and women participate and emphasized that the program staff make efforts to include women. She makes an effort to accompany her male technical assistants so that the women will talk as well. She said if two male technical assistants entered a village the women would go running into their houses, but if there is a female present they will talk. She said:

We have a process of working with the entire family. So, generally it's a couple . . . the ones who want to represent . . . who want to talk are the men. They always take the front. But we don't have this type of thing, like some programs that work more with (men) because it's a masculine activity. Agriculture is masculine and feminine. And it has to be done together; they understand this . . . and with children as well. Just to give you an example, if I were having an interview . . . if I were in a house and had everyone in the house there . . . the woman would always let the husband respond, even if I said, 'I want to talk only with the woman' but if say, 'Let's talk about agriculture . . . ' and I begin to ask . . . always everyone will be waiting for the boss of the family, and that is the man, to respond. But we try, in meetings, we insist a lot for the women to be there participating. We want them to participate. We understand that this is best done together as well. There was a funny situation . . . we were in a house and starting talking about the field, and the man was banging his head that something (had gone wrong) and the woman was banging her head that there was something they could have done

differently. They fought a lot. We knew that everything had gone wrong in the field. It flooded; they lost the better part . . . and I don't know what . . . the woman was sure, 'Didn't I say? I knew the flood was going to be like that but he didn't believe me, na na na na. . . .' So, they lost the better part for not listening to the woman in this case. It was very telling. But it's like this . . . I think we work with both (men and women) . . . at least we put forth an effort to do this, no?

During an interview with the coordinator of the fishing program (CFP), I asked whether she had observed any changes in the women who participate. Her response indicated that there was no formal attempt to deal with gender issues within her male-dominated program but that she and her staff still try to involve women.

Kayte: Have you observed any changes in the women who participate in the fishing program?

CFP: I . . . sincerely . . . Kayte . . . the managed fishing program . . . I think that it hasn't been given an incentive for this question of gender. It's our own fault because everyone begins to work, and then, has to do everything very practically, very fast and all, and we finish without having incented the women like we could have incented their participation. You know, besides the fact that I am a woman, and Carol is a woman, I think this helps a little . . . and then we are always talking in the meetings . . . our incentive is not like this . . . planned. (but) in the meetings we say, for example, 'People . . . women, let's help, let's participate, women organize.' And then the people begin to talk. I, Carol as well, try to motivate. But there doesn't exist a plan like this, 'Let's do it like this . . . to include the women.' No, this really doesn't exist.

The fishing and forestry programs are highly male-dominated, which is consistent with the traditional gender division of labor. The staff expressed cautiousness when intervening in local gender norms. There is concern about disrupting family life, so some program coordinators are hesitant to interfere too much in the status quo. However, there is more emphasis placed on gender issues in the programs that are directed at women's interests. The Director of Natural Resource Management and Social Development, who is also the Coordinator of the Community

Development Program, discussed the need for gender-specific programming to address imbalances in power relations between genders:

. . . when the Reserve was created, fifteen years ago, no? . . . They (women) didn't participate. They didn't even go to meetings. Only the men went. We noted this and we began to think about this. 'How are we going to involve the women in making decisions?' and then came Marilia to work here and she had the idea to start groups, no? . . . of women, motivating them to participate and also came an economic alternative that was artistry . . . and other areas were sewing . . . and we created a way for them to meet and discuss their problems and how they could contribute to the conservation and development of the Reserve.

After, they felt safe to go and give their opinions in the bigger meetings. So they began to participate in the assemblies and all. At first they wouldn't go and they had husbands who wouldn't let them. They wouldn't even let them participate in these groups. So, it was very difficult work to do, make these groups and how they would leave the sphere of these women's groups to participate in meetings in the community, the sector meetings and the assemblies. In some communities, this resulted in violence against the women. The guy didn't want to let her and she wanted to participate and there grew a problem. So we also felt the need to work with the idea of violence, no? . . .

Women's issues are also openly discussed in the health program, for example, and programming is planned to address these issues. The health program is directed at activities such as prenatal care, family planning, health education for children and adolescents, administering vaccines, training midwives and local health agents, and education regarding domestic violence. Power relations between men and women are critical in determining women's ability to assume leadership responsibilities, which often involve duties such as travel, public speaking, and negotiating bureaucratic matters. The women of Floresta, who spoke openly in a focus group about how their volatile husbands and large families limit their ability to travel and even speak to other men, present good examples of how social structures, in this case power relations, circumscribe agency. The IDSMS staff who work with the health program are actively

attempting to foment change for women's benefit. One staff member discussed the challenges in addressing the insidious problem of domestic violence:

Merces: This is a thing that is very accentuated, no? . . . in the region. . . like this, the man against the woman or the family itself against the child because the manner to educate here in the region is hitting, no? yelling, screaming, many times. I think it will take many years for us to work with this.

Kayte: so this happens here?

Merces: This happens. Like this, from the father to the child, this is natural . . . fight, hit, it is the manner to educate. So we will have to work, that is to say that hitting doesn't resolve things. This is a thing of the region . . . and we have even a phrase that says, 'to hit is to teach to hit.' This is a thing of violence of men against women as well. It's well, very present. It is the man who commands; the man who says, 'Don't disobey me,' . . . hits as well. Sometimes he drinks to say that he was drunk, but a man who hits a woman, hits.

Kayte: And have you spoken to any of the women about this, in these courses, about what they think about this . . . if they think it's a natural thing that was always like this or if they are resisting?

Merces: This is a very delicate issue . . . I already did two workshops that we gave the name 'peace begins at home.' At its foundation the workshop is developed more to talk about violence. In this workshop, we talk more about sexual violence. . . . This happens with the father, his own children, with a stepfather, with an uncle, in the end, with the family involved. After, I worked with two communities in the Reserve with this workshop, 'Peace begins at home,' about the question of violence. And we spoke most of violence against the child and after we talked about sexual violence. After we left this community, we left knowing that there was a case where the stepfather had been harassing the daughter . . . a girl of eight years. This is a problem that many times the authorities don't act upon, no? because they don't have anyone who will denounce (the perpetrator) . . . they are afraid. We teach that it has to be done . . . no? go get the authorities, make the denouncement, but even so, the family is involved and it is very delicate. But in this case, it seems the mother gave the girl to her grandmother to raise in Tefé. I'm speaking more about this case but if you were to look, this case is not isolated. There are lots of cases. Because the authorities are very slow. At times a person is afraid to denounce because the husband threatens . . . so we talk more about sexual violence.

Family Support

I also found that the degree to which women had family support for their participation makes a difference for women's ability to rise to leadership. Women who are very active in community life and Institute programs tend to come from families where various other members are active in the community and provide role models for younger family members. Leticia, for example, became immersed in management issues through her association with her second husband, who was one of the local founders of the Reserve. Julia's husband previously worked for IDSME and currently works with her in the forestry program. Another female leader, Yaritza, who is treasurer for the ecotour labor union, AAGEMAR, and one of the moderators for the General Assembly, is also a *catequista*, or local religious leader. As a moderator for the General Assembly, she speaks in front of a hall full of people using a microphone to lead the group from one topic to the next. Her uncle was a *catequista* before her. She attributes her development in public speaking to her uncle's example, in addition to the many trainings and meetings she's since attended as an adult. Because of him, she said, she wanted to also become a *catequista* and started attending training workshops in her early teen years. This is where she began to speak in public and developed her confidence to lead. When I asked her how she got involved in her work as a religious leader she responded:

When I was young, since the first meeting, I said that I would participate . . . that's when the desire to walk in the church arose. My uncle was a catequista. I saw him participate in this course . . . and after I had 13 or 15 years . . . I went to participate in the course to be a catequista in Alvarães. My parents brought me there. They helped me, left me there . . . and I did the first course.

When it came time for the second course, I think I had 15 or 17 years . . . 18 years. I already had my first daughter and I was here in (living in) Tefé. The priest called me to attend but I didn't go. . . . When I returned to the community, the priest spoke with me again. I told him that I wanted to participate in the second course . . . he resolved to call all my colleagues who

had also missed the second one . . . and then . . . I still didn't participate. Because it was the phase that I was in . . . with my first child . . . I had my husband, my second child already. I had my husband and still had not left being near him very much because he didn't want me to participate in anything.

Not only does this quote point to the importance of role models and family support in pursuing organized activities, but the end of the quote illustrates how family responsibilities and power relations with an unsupportive spouse can impede participation. Yaritza temporarily interrupted her training as a *catequista* because of her husband's disapproval and her responsibilities as a new mother, but in time she overcame these obstacles. Her children matured to the age where she felt comfortable leaving them at home, and she eventually won her husband's approval for her activities outside the home. She describes "winning her liberty" as one of the biggest events in her life.

The importance of family support is clearly seen in Ana's case. Ana comes from a family where most everyone is involved in leadership, natural resource management, and IDSM programs. Her father founded his village, was active in the establishing local ties with IDSM researchers in the early stages of the Reserve. He is currently a caretaker for one of the IDSM research stations, an enviable, salaried position, and is viewed as the village elder. Ana's mother was leader of the village women's group for years before she passed away. One of her brothers is a salaried enforcement agent, while a nephew is a volunteer enforcement agent. Another brother works as a field assistant for a research project. A third brother was previously president of the community and is married to the current president, Francesca, who is another woman leader participant in this study. Several sisters, a brother, a niece, and two nephews work for the ecolodge and hold various other field assistant jobs from time to time, as does she herself. Another older sister was a teacher. Ana later became a teacher as well. Two of Ana's sisters, Lana and Eliana, who are mentioned

individually in this study, also hold leadership positions and like Ana have many familial ties to other men and women in positions of power. Beyond Ana's nuclear family, her uncle for many years was president of his village, which neighbors Ana's. He is the sector representative for Mamirauá Sector, the vice-president of the Residents of the Mamirauá Reserve Association, and holds a salaried position with IDSM. Ana's Aunt, Dona Beatriz, the wife of this uncle, was the leader of her village's women's group for many years and is currently a local community guide for the ecotour program. And this family's connections to the Reserve and other positions of community leadership continue. For example, Ana's aunt and uncle, discussed above, are the parents of another enforcement agent who is married to Yaritza, yet another woman leader whose experience contributes to this study. Raised in this family, Ana and her sisters were exposed to many role models. Ana's family is clearly immersed in civic life, probably more so than most, but time and again, women I found in positions of leadership also had family members who held positions of authority in the community, municipality, church, or with the Reserve.

In the case of the one perfunctory female leader, this woman was elected to a seat on the Deliberative Council but has very little leadership experience and is unable to articulate the purpose of the Council or explain her own role. This woman did not seem adequately prepared to perform leadership duties but had been elected to fill a slot opened up through the participatory management process. Interestingly, she had married into the most influential, politically powerful family in her community. Her husband also sits on the Deliberative Council. Her father-in-law, who is Ana's uncle discussed above, had been the community president for years until recently and is still the sector leader and the vice-president of the newly created association of Reserve residents. Her mother-in-law, Dona Beatriz, had been president of the women's group

for many years, is the community midwife, is a community guide for the ecotour program, and oversees the children's environmental education program.

As a member of the Deliberative Council, Lenilza represents the various women's groups throughout the entire Reserve. A seat on the Deliberative Council is one of the potentially most influential positions a Reserve resident could hold. As one of nine voting members from the Reserve, it is an important position. She stated that she was nominated and elected by others from the various villages that have women's groups. It was not her idea to assume this position, but she agreed to.

When I interviewed Lenilza at her home, she was caring for eight children all under the age of seven. The scene was chaotic, with children running, yelling, and playing in and around the house. She was busy making a birthday cake for her three-year-old son and explained that she didn't have much time to talk with me but spoke to me for 27 minutes. The entire time, there were children playing and talking throughout our conversation. At various times she interrupted the interview to ask the children to be quieter. Clearly, caring for such a number of children inhibited her ability to even hold a conversation about her duties as a Councilor. One of the other members of the Deliberative Council described her as "needing to study a lot," and she described her own participation in meetings by saying she only speaks a little. She will say when she thinks something is a good or bad idea but doesn't speak much in general. When I asked her how the Deliberative Council functions, she said:

I represent the group of women on the Deliberative Council . . . and the Council . . . it is just beginning in the Mamirauá Reserve . . . I'm still not really . . . I'm a little outside of it. I'm a little hard in the head. I'm learning, no? The Council is to decide what will happen inside the Reserve.

She is 26 years old, a mother of five young children, and married to one of the enforcement agents. Her husband also sits on the Deliberative Council as the representative for the park guards. He is the son of Ana's politically influential aunt

and uncle, described above. Again, we see a case where the female leader is well connected to kin in leadership positions, has the support of her husband who is also involved in the same or similar work, is able to travel with her spouse to attend meetings, and is then more able to bring at least her smallest children along when fulfilling her responsibilities as an elected Councilor. In this case, these factors seem to be more important in placing her in a leadership role than her own interest in the position or her innate abilities to carry out the required duties. Though there is only one case of this type of leader, I find it interesting to see that the structure imposed by a participatory natural resource management strategy could open space for female leadership that is then not necessarily filled by an individual who is prepared to execute her duties and utilize the power inherent in the position. This case illustrates that it is not sufficient to structurally create space for female (or any minority) leadership, but that capacity building must accompany these new spaces. I hypothesize that in Lenilza's case, her family connections were key to her election to the Deliberative Council. Additionally, because her husband is also on the council, they are able to travel together to meetings, another factor making it possible for her to maintain the position.

Training and Education

IDSMD has conducted numerous workshops, sponsored many training excursions, and facilitated interactions between Reserve residents and outsiders in numerous ways throughout its history of involvement in the area. Many women discussed how their personal development has been nurtured by these opportunities and particularly how they have grown more comfortable speaking in public and with strangers because of these opportunities. Trainings have been an important means of not only developing

women's capacity as leaders but also providing women opportunities to organize.³⁷

Trainings cover many topics that range from the very practical, such as operating motorized engines, to addressing more abstract concepts of leadership and gender relations.

When I asked Ana how many trainings she has attended, she couldn't remember for sure but she estimated about 18. Yaritza listed off having attended trainings for cooking, serving clients at the ecolodge, community leadership, accounting, agriculture, drying fish, midwifery, women's rights. She has also traveled to Manaus to attend training as a religious leader and participated in the Women's Encounter in Acre as well as attending an artisan fair in Acre.

Yaritza describes how she got involved in these trainings and how they impacted her development as a leader:

Kayte: And how did you decide to participate in these workshops . . . ?

Yaritza: I was chosen, by the community. Because the president saw that I was a person who was more active within the community, that had more capacity to work as a community leader. I was picked to participate. And each course that I participated in, each time opened my memory more, to know how to work with the community, with participation, organization . . . always in front of those things. Each encounter that I went to, was one more incentive for me to learn.

Kayte: And what type of things did you learn in these workshops?

Yaritza: In the leadership workshops? . . . how to work with the people. How to work, how to be a . . . and how to work, how to be a leader, how to be a

³⁷ Like offering trainings, encouraging women's organization has been one of the ways in which IDSM has assisted women in overcoming barriers to leadership. Women's organization is discussed more fully in Chapter 4(Division of Labor) so I only mention it here briefly. However, it should not be overlooked as an important means of promoting women's leadership. IDSM has done a lot of work to support groups that are primarily for women which results in the creation of leadership positions that are then filled by women. These groups also provide fora for women to discuss common problems; plan cooperative strategies; and learn, practice and master leadership skills such as public speaking and negotiation.

person in front. To have the manner to converse with the people, how to have the manner to not leave the work (hanging), and to not weaken, we say, not leave the work to die, not leave the organization to stop, to always have an animated manner in front of the everyone because . . . the community doesn't end. These things, these incentives, that we learned for always being animated in front of the people. First, a leader needs to be a very happy and lively person, and dedicated, and with much force of courage. Never can a leader be sad, dispirited, or the rest will also be spiritless. So, even if he doesn't feel like it, he is always trying to motivate and raise spirits.

Many of the female leaders also continued their formal training as adults. Ana, Neuza, Yaritza, Eliana, Francesca, and others all attend formal adult education classes to further their educational attainment. It is important to note that they live in villages where this is available, which is not the case throughout the Reserve in general. Ana has aspirations of attending the University. Julia, Ana, and Leticia, all very active leaders, were also all teachers for years earlier in their lives before they became involved in the functioning of the Mamirauá Reserve. So, though they each have limited formal education, they were involved in the formal education process in positions of authority. The experience they gained through executing their responsibilities as teachers, the confidence this built, and the respect they gained as community members was likely to contribute to their ability to move into positions of leadership in the management of the Reserve when these opportunities arose. These experiences working as teachers were made available by the municipalities, not IDSME, but in listening to these women speak about the development of their lives, it was clear that the influence of these experiences were important in preparing them for the work that they now do with the Reserve.

Beatriz has also received numerous trainings including leadership training and taking minutes for meetings. She also traveled to Manaus on several occasions to attend workshops.

Dona Beatriz provided a telling anecdote about how she gained confidence to assume leadership roles due to trainings she had attended:

Kayte: I remember when I first met you last year, you told me that a long time ago you didn't like to talk with foreigners or outsiders and now you are more accustomed to talk.

Beatriz: I didn't like it, no. If someone arrived at my house, I was very . . . I didn't like to talk. I didn't have the custom of conversing, no? Because in my mother's time, she didn't let us talk with certain people. She had a very different habit.

Kayte: She didn't like you talking with people you didn't know?

Beatriz: With others, strangers. And now, no. Now I talk with anyone.

Kayte: And why? How did this change?

Beatriz: I changed because, it was in the time when I began to work, I studied little you see. I didn't study much. I studied a little, but I went out to trainings, with other communities, no? I left to visit other communities, and I went leading with the others, you know.

Kayte: So you have had the experience of knowing lots of people?

Beatriz: I know the others.

Clearly, the many programs offered by IDSM, in addition to the various others available to Reserve residents through the municipality or church, have had great impacts on women's lives in the Reserve.

Employment

One way in which IDSM has not yet responded to issues of gender in the employment opportunities made available to men and women is in relation to the local nature guide position at the ecolodge. This job is traditionally a male position but there are now two women who have entered the role as well: Ana and Francesca. The door has been

officially opened to women to participate in the training for this job and to assume the role if they are hired; however, the job requires working at the ecolodge for several days at a time, sometimes as long as a week. The guides all sleep together in-house. No accommodations have been made for separate rooms for male and female guides as have been done for the other staff members. Nelissa, the coordinator of the ecotour program, discusses how the men react to Francesca and Ana joining them as nature guides:

Kayte: What do you think the male guides think of working with the women who are also guides? Do they accept it?

CEP: They accept it. They accept. They don't have a problem with this. I think not. Particularly in relation to Francesca . . . she is a friend of theirs. In the beginning they thought it was strange . . . because they sleep together. The women's dormitory and the guides' house are separate. The guides have a house.

Kayte: Just for themselves?

CEP: Just for them. And the kitchen personnel live in the lodge. Up above. So in the beginning it could have been that they thought it strange, a woman in the midst of all of them. They speak lots of bull. They have some conflicts in regard to this, because they like to speak lots of foul language, make jokes. In the beginning she was pissed . . . Francesca. Because they kept doing this in front of her. Things like that . . . bullshit . . . of men, no? between themselves. And she would scold them.

Kayte: So when she and Ana, when they work, they stay with the men?

CEP: They stay. Stay with the men.

Kayte: The kitchen personnel, the men and women . . . they have separate rooms?

CEP: Yes, they have. They stay separate.

This is an example of a material constraint to women moving into this male-dominated position of nature guide. Though two women have chosen to take the position despite having to share living quarters with male co-workers, this would likely be a deterrent to many women and husbands of women considering the position.

Income

The various economic activities initiated by IDSM have helped women gain more autonomy and greater balance in power relations with their male kin. The effects of this change on the division of power within the household are discussed more fully in Chapter 4 (Division of Labor) but this change merits mention here as well, as women's access to income is one of the factors I found separated non-leaders and leaders. First, accepting jobs outside the community necessitates expansion of women's roles into the public sphere, opening up opportunities for other benefits mentioned earlier such as training, organization, travel, cultural exposure, etc. Additionally, access to economic resources increases women's bargaining power, allowing them greater ability to insist on spousal support for their desired endeavors such as assuming leadership positions. Furthermore, access to one's own income provides the resources women need in order to fulfill many of the voluntary duties involved in leadership positions such as traveling to meetings. In order to be able to attend meetings, women need sufficient economic means to pay for gas and food, as well as the financial ability to forgo working elsewhere while they are volunteering their time. See Chapter 4 for a more complete discussion on the implication of women's entrance to the cash economy for gender relations.

Capital

Another critical factor that structures what is possible for women to undertake is access to capital to begin projects. In an area where individuals have very limited resources, financial assistance to launch projects has been critical. The Institute initiated a microcredit program which offers small loans to men and women alike. There are also other forms of support offered to assist with getting organized initiatives off the ground. The Institute has donated equipment, materials, logistical support, and technical assistance to numerous projects that benefit women. Some examples include the donation of the original ecolodge raft that became the main building for the ecolodge. Without this donation, the program would likely never have been realized. The Institute also donated to a women's agricultural project, a raft that had supported a dilapidated research house. This women's agricultural group wanted to expand their production for commercial sale but were limited by lack of solid ground in which to plant. The Institute donated the raft to become a floating garden. Once the women's male kin were convinced that the project was worth investing in, they assisted the women by building garden beds on the raft. The women then tended to this large, floating garden, which had a great success, at least for a limited time. Another example in which IDSME supported organized initiatives which then provide opportunity for female participation and leadership included helping the artisan groups to access support from external agencies. Various women's groups within the Reserve have been provided mechanized equipment to increase their productivity. The group in Peixe-Boi, for example, has been given equipment for sanding and piercing beads, which offered the potential of drastically increasing their production.

Technical Assistance

Another important way in which IDSMD supports local involvement of both men and women particularly in economic endeavors is through providing assistance with managing bureaucratic matters such as obtaining individual legal identification cards or legalizing the status of an organized group. Julia explained that one reason why she was chosen as the president of the forestry group in her village, a male-dominated activity, was that she was the only person who had legal identification. Natural-resource-based extractive activities within the Reserve such as forestry, fishing, and harvesting caiman require legal authorization by the state. The group must establish itself as a legal association. IDSMD staff has been instrumental in assisting locals with navigating the legalities involved in establishing these natural-resource-based productive groups.

Political Structure

There are several ways in which female participation and leadership are supported as a result of either State or Institute policy. For example, the Deliberative Council has a State mandate to have at least 30% female representation. As a result, promising female leaders such as Ana, Leticia, and Julia were sought to fill these positions. Interestingly, out of 18 *local* council members, exactly one third are women—no more than the legally required number of female representatives. Not only are there programs directed specifically at women's interests, there have also been gender workshops offered where couples were encouraged to attend. These workshops were intended to bring to light the impact of gendered power relations. The Director of Natural Resource Management and Social Development, who is also the Coordinator of the Community Development Program, describes the Institute's efforts to incorporate gender awareness training into their programs:

Before a Sector meeting, we go to all the communities, no?, reminding them that there will be a meeting, and inviting the men and the women and speaking of the importance that the women participate. And then we also have a lot of . . . motivating groups to form, no? . . . the women's groups. We had a period when we tried to make a women's group in all the communities so that they would then demonstrate their presence in the community. And ultimately, what we have done is have workshops. . . . We had workshops about the social relations of gender. We gathered a Sector or more than one Sector to have the workshop, to discuss the roles and demonstrate for them (women) that they have all the conditions to also opine, to present their opinions about all of this. And we had work with education, education and health, no? turning back to the midwives, no, because they attend principally the pregnant women, no? and the children. So generally, when we have a capacitation workshop for midwives, we are talking also about the role of the woman, no, in society. So these are the initiatives that we have . . . and so we seek . . . that the administrators of these workshops are a man and a woman . . . no? . . . because if were only women (laughing) . . . the men wouldn't come and if it were only men, the women wouldn't come. So we look for a balance in the team, the same number of men and women.

Conclusion: What Separates a Leader From a Non-Leader?

The social structure within which women live out their lives in the flooded forest of the Amazon is male-dominated and is also shaped by the challenging physical environment. The landscape, more accurately described as a waterscape, not only creates daunting obstacles to travel but determines the possibilities for natural-resource-based economic activities. So in this semi-subsistence-based economy, income is highly influenced by the physical environment. Farming is seasonally limited on what little land exists; forestry is extremely demanding and seasonal; fishing dominates the economy. These economic activities, all physically demanding and difficult to do while caring for children, are heavily male-dominated, which has meant that men generally control the family income. The introduction of economic activities that accommodate women's needs has increased women's buying and bargaining power, mobility, autonomy, and political engagement. Though some women have succeeded in finding a political voice, men are generally still considered

the heads of household, the decision-makers. Women, above all else, are mothers and wives whose opportunities are greatly circumscribed by the responsibilities of these roles. One upper-level IDSM staff member stated:

We felt the need to work with (domestic) violence . . . and from there other things also that we see need work . . . but . . . the Reserve is enormous, and persisting a lot, the problems are enormous, no? We try to give, to attend proportionally to (the women) who are many . . . it's a very big job. (*Isabel Soares*)

Though the women who have risen to hold a seat on the Deliberative Council have made great strides in gaining equality in comparison to many other women in the region, even these women take a back seat to males. Not only is there a power differential between Reserve residents, or *coboclos*, and more highly educated urbanites such as IDSM staff, government officials, religious leaders, and university scholars, but there is also another level of inequality between male and female local representatives as a result of traditional gender norms. Matteus, one of the Deliberative Council members from the Reserve, described how the Reserve residents don't talk much during the Council meetings. They have "fear" and "embarrassment," and they are not given much opportunity to speak. He said representatives from the military, the church, and the university talk the most and don't leave space for the others to join in the discussion. He was clear that women don't talk much in the meetings, and he discussed the problem of transport. He described how the power differential plays out in the physical arrangement of the meeting. The councilors all sit in a large circle, but the local representatives all sit together on one side, while the "authorities," as he described them, sit on the other. Ana, who was present for this interview, confirmed Matteus' story. He also stated that the authorities use complicated words that the *coboclos* don't know, that people are confused and don't speak. Many don't know why they are there but they come because they were invited.

He is very concerned about the discrimination he observes. Interestingly, Matteus also mentioned that he has attended a gender workshop, which may in part have aided him in recognizing the power relations he described in the Deliberative Council meetings. Through the creation of the Deliberative Council, structural positions have been created that are intended to ensure fair representation of local people, women, and other designated groups. Addressing equality at the structural level is necessary, but the example of the continued power differential within the Deliberative Council shows that structural change alone will not necessarily produce equitable power relations.

What separates women who have become leaders from those who have not certainly includes empowerment at the structural level, but these women also create and have benefitted from change at the individual and interactional level as well. The lives of the women I categorized as leaders are strikingly distinct from most. Many Mamirauá women do not even participate in organized activities. In contrast, women who lead consistently were found to have supportive home lives. They either had no spouse to impede their efforts or exhibited home lives free of domestic violence, with spouses who supported and often shared in their activities, including traveling together to meetings. They tend to live in areas with higher levels of program activity. They all have family members who provide role models and political connections. These women also received child-care assistance from spouses and other family members, which, in addition to the above-mentioned factors, allowed for increased mobility to attend meetings and trainings. All of these women participated in numerous training workshops and had many interactions with people from outside their village. Most have had at least some experience traveling outside the Reserve and immediate region to visit other areas of the country. They also receive some paid income, which they note was instrumental in obtaining spousal support for their political activities. The experiences of successful women leaders in Mamirauá illustrate the importance of

altered gender consciousness, structurally enabled opportunities for positions in new social-relational contexts, as well as instrumental capacitation and material resources in the transforming gender.

These women are undoubtedly persons with aspirations and capabilities that reach beyond the average, but they are also people who were presented with opportunities unavailable to many other less fortunate women. They were not only personally inclined to accept these opportunities but also socially positioned where they were able to take advantage of the opportunities. It is the combination of internalized images of women as capable of leading, interactions in empowering, more equitable social-relational contexts, and structural enablement that has made their choices possible. The experience of the Mamirauá women leaders supports Gardner's (1990) assertion that the problem of women's low representation in leadership is not one of performance but of opportunity. In Mamirauá, many of the opportunities available to successful women leaders are not systematically available to any woman desiring them.

Furthermore, though this small group of exceptional women have made great strides toward equality in comparison to other women in their region, there is still a long way to go in order for these women to reach parity in power with their local male counterparts and even more so with the highly educated, urban managers with whom they sit on the Deliberative Council. In name, participatory natural resource management appears to be the politically correct solution for managing resources in an inhabited reserve. In studying the path taken by the various female leaders from this reserve we can see that the many interventions and opportunities created by the conservation programs have indeed opened doors for these women, increased their autonomy, and improved their prospects for future opportunities. However, the power differentials apparent on the Deliberative Council indicate that there is yet much to be

done to further increase equality between locals and institutional Reserve managers and even more so between female Reserve residents and the men, both local and external. Even the most active, influential women leaders have still not reached parity with men in all situations. One IDSM staff member, referring to Julia, said that “She organizes the community . . . but the men still decide.” Local residents also face various drawbacks when assuming these volunteer resource management positions, which will be discussed in detail in the concluding chapter.

Lessons Learned?

This study supports a number of findings that have been presented in the literature on women’s participation, empowerment, and leadership. As in other rural research contexts, I found that common barriers to leadership for women fall into several categories: lack of opportunities (for education and training, lack of economic resources to launch entrepreneurial endeavors and execute duties that accompany leadership positions, and lack of political space to organize), restrictive gender norms (particularly those governing cultural expectations relating to marriage and motherhood), burdensome labor demands, and structural inequities at various institutional levels (including imbalanced gender representation at all levels of government and male-biased organizational style). However, I found the physical environment to be a critical factor in determining possibilities for women in Mamirauá. This factor has received little attention in other research contexts, and though I believe the restrictions and challenges imposed by the flooded forest of Mamirauá to be more ominous than many other environments, I argue that the effect of environment merits further research in other contexts. Efforts to encourage women’s participation and women’s leadership in Mamirauá include various tactics in other similar contexts such as women-only (or women-centered) groups, economic

initiatives open to or focused on women, and training opportunities. However, if one considers the cumulative recommendations to increase gender equality gleaned from studies around the world, a number of areas can be identified in the Mamirauá setting that could be improved. There needs to be a more explicit effort made to reduce the power imbalance between the local residents and the managing agencies. Further reform to ensure gender equality in the management structure of the Sustainable Development Reserve unit at a national level as well as at the organizational level of all managing agencies is needed. For example, a quota of 30% female representation on the Deliberative Council, which is the State mandate for this type of conservation unit, will not result in gender parity. Currently, most staff at IDSM are somewhat familiar with gender issues and seem supportive of gender equality as a goal, but there is little institutionalized mandate reflecting this in their program goals. There should be more explicit and systematic effort to combat unequal gender relations by working to engage both men and women in dialogue regarding these issues. Managing institutions should focus more effort to raise women's participation and leadership on the family, where women often encounter resistance in their social relations with male kin. In addition, women-only groups can be beneficial for increasing women's confidence, changing norms and perceptions, and increasing acceptance of women in public roles; however, at times these groups have elicited hostility from men (Agarwal 1997, 2001). The Mamirauá case has produced a number of *women-centered* groups, which may point in a useful direction. These groups are focused mainly on women and have higher female participation but they do not exclude men, which may avoid the negative consequences Agarwal cites. The Mamirauá women-centered groups such as artistry have played an important role in winning male support for women's projects as well as their entry into wage labor and leadership. The artistry group, for example, has bolstered new forms of cooperation between spouses, as men now gather seeds

from the forest, to be used by their wives to make jewelry. Groups that allow women to organize around their interests and issues yet also incorporate men may offer a fruitful middle ground. Women will more likely participate if their husbands are also included. Furthermore, on a practical note, they will be more able to participate if their children are accounted for as well.

Practical solutions to women's labor burdens such as providing child care will go far to open opportunities for women, as will structural reform that creates more openings for women leaders. Furthermore, in the case of Mamirauá, the obstacles presented by the physical environment cannot be overlooked. Assistance in overcoming these constraints is critical. However, without confronting restrictive gender norms that discourage or prohibit women from accepting potential leadership roles and without capacitating women in the skill areas necessary to perform leadership duties, only the few, exceptional cases will overcome the many barriers to leadership.

Last, NGOs must be willing to accept the reality that their programs not only have explicit mandates but also produce unintended consequences that can shake up social systems in very fundamental ways. I argue that there is no way to avoid gender issues when implementing natural resource management programs in inhabited protected areas and that NGOs would better serve their objectives if they address gender and other social equality issues directly and systematically. This would require the willingness to venture into the realm of private family life, one of the primary patriarchal social institutions. It is within families that internalization of normative cognitive images of masculinity and femininity solidifies. Families are also a primary social-relational context within which gender is enacted repeatedly day after day. Many Mamirauá staff are hesitant to address gender equality directly within families and communities for fear of disrupting traditional social organization. Various staff

members also expressed concern over lack of training in gender issues. However, clearly families are impacted by the structural changes introduced to the Reserve that have enabled women to enter the wage labor force. As will be discussed in the subsequent chapter, families are impacted strongly and in many ways by the Reserve programs. The Mamirauá Institute makes some attempt to empower women through programs such as women-centric economic activities, health programs, and trainings; however, to truly promote gender equality and women's leadership, gender structure must be addressed not only on the institutional level through providing opportunities and resources, but also at the individual and interactional levels by raising gender consciousness, creating new cultural expectations for men and women by promoting interactions that place women on par with men, in both public and private spheres.

CHAPTER 6:

THE EFFECT OF PROGRAM PARTICIPATION ON FAMILY ORGANIZATION

It is perhaps in the family and other intimate relationships that gender is still accepted, even ideologically, as a reasonable and legitimate basis for the distribution of rights, power, privilege, and responsibilities. It is at home that most people come to believe that men and women are and should be essentially different.

—Barbara Risman, Gender Vertigo, 1998:4

Within family processes of livelihood decision making, it becomes apparent that roles and relationships of power are central to the 'agency' of the household. Power is essential to having one's needs articulated and acknowledged and being able to influence the decisions and action which make up the livelihood strategy of the farm household.

—Monica Gorman, Rural Gender Relations, 2006:31

Introduction

In this dissertation, I seek to understand to what extent participatory conservation empowers women and dismantles the gender system. This chapter examines how the integrity of the family unit is reinforced or undermined by participation in programs related to management of the Reserve. Examining program outcomes on the family is critical to this enterprise because the domestic sphere is a central locus of male dominance. In order to change gender relations to a more egalitarian state, we must transform patriarchal institutions such as marriage and family (Molhatra 2002). By examining the institution of the family, we witness the creation, reproduction, and contestation of women's subordination through the interconnected processes of internalization, interaction, and structural constraint. It is through socialization practices within families that girls first internalize restrictive cultural norms and boys internalize male privilege. Families are the site of extensive and re-occurring, intimate interactions between gendered members where social-relational contexts are organized

around performing gender normatively. Families are also the site of women's subordination created and reinforced by structural constraint in the form of unequal rights, unequal distribution of resources, and unequal division of labor, particularly regarding child-rearing responsibilities.

But just as families are a critical site where gender inequality is created and reproduced, they also present opportunity for transformation. Sullivan (2004:219) writes, "By focusing on daily interaction as a potentially transformative process, it is possible to conceive of women's everyday struggles around the domestic division of labor as a constitutive part of a wider societal process, involving slow changes both in consciousness and in practice."

In this chapter, I am specifically interested in the effect of women's participation on their relationships with their families. I analyze the effect of women's program participation on family structure, the process of household decision-making, and the family functions relating to consumption and production. I was also able to draw conclusions regarding program effects on the family function of socialization of the next generation, specifically that relating to young people's involvement with traditional economic activities. The functions of reproduction and even co-residence are also affected, particularly by community development programs focusing on issues of women's health, domestic and reproductive labor burdens, and domestic violence. Investigation of these latter issues would be a compelling subject for future research; however, these questions remain beyond the scope of this study.

Women's lives in the communities most actively involved with these programs are now different from how they were 15 to 20 years ago, before the inception of the Reserve. They are also notably different from women's lives in Reserve communities that have had less program involvement. Given the breadth of the programs introduced, which include community development, resource restrictions, and

economic development, their lives have been touched in many ways. In addition, the influx of outsiders, whether researchers, extension workers, Reserve managers, enforcement agents, donors, foreign tourists, or *coboclos* from neighboring regions, has increased the flow of resources, ideas, opportunities, and material goods to the area. Increased access to transportation in the focal zone has added to this effect as well. Though the result for women, as with men, has been multi-faceted, in this chapter, I focus on an aspect of women's relationship to their families that is particularly interesting sociologically, bearing on power relations between spouses in addition to family structure and function. I examine the impact of increased economic opportunity on family life, particularly in relation to its effect on declining agricultural production. My focus is not on the decline in subsistence agriculture and fishing per se, but this decline can be viewed as an indicator of significant changes in family organization and function. As people are drawn away from subsistence activities by the lure of opportunities to earn cash, family members become more dispersed, which in turn has the potential to result in a variety of outcomes. These might include dependency on purchasing staple foods, a loss of intergenerational transfer of traditional knowledge, changes in identity, lessening family cohesion including marital discord and loss of parental supervision in the home for children, and changes in the balance of power between genders. There can also be a change in the flow of material goods into the household as women obtain greater buying power through access to their own income.

Family is a fundamental social institution that has been defined as “a social network, not necessarily localized, that is based on culturally recognized biological and marital relationships” (Thornton and Fricke 1989:130). To understand the significance of these networks, we must consider the nature of the relationships of the members. Kabeer (2001) describes family as “an intensely personal arena of life

[where] relationships are suffused with feelings and emotions to a much greater extent than any other institution in society.” Families, in her view, are “based on ideologies of affectivity and shared interests,” and it is this, she argues, that makes families particularly well suited to achieve their goals. Though *household* and *family* are not interchangeable terms, as people may be related to one another but dwell in separate domiciles and unrelated people may share a home with varying degrees of cooperation, generally households are composed of family members related by marriage or blood. The institutional conceptualization of the familial household (Kabeer 2001) views the household as “an institutional response to the human need for long-term stable environments in which to bear and bring up children, to care, and be cared for, through sickness, disability, and old age and to plan for the future in a world characterized by uncertainty.” More broadly defined family *functions* include production and consumption of commodities, reproduction and socialization, co-residence and transmission of property. Agarwal (1997) sees families as arenas of consumption, production, and investment, having multiple actors with different, often conflicting, interests and differential abilities to achieve their goals. The familial arena is one where labor and resource allocation decisions are made, often showing gender inequalities in the distribution of resources and responsibilities. These various views of family cumulatively build an image of a fundamental institution necessary for the reproduction of society, which is characterized by affective marital and consanguine relationships based on both shared interests and conflict. I view family as having three key aspects: composition and organization of group members (structure), what they do (functions), and how they do it (processes).

Agricultural Decline and Family

. . . if the whole family goes to produce agriculture, there will be a good harvest in the fields. They will earn a lot of money, harvesting everything they planted. Now, if only the woman and her children go, sometimes the water rises rapidly and doesn't leave time to collect everything. If the man goes too, the whole family, the children, then they will collect everything they planted. Then they will have a good showing of money and guard a lot of *farinha* to eat for many months. (*Otacillio, IDSM Alternative Technology Program*)

We are only planting banana now but this year we want to plant the fields with manioc because we are buying a lot of *farinha* and the money goes very fast, and nobody knows where it goes . . . it goes just for *farinha*. (*Francesca, Reserve Resident, Peixe-Boi do Mamirauá*)

The institution of family is the locus of reproduction and consumption. In a subsistence economy, it is also the locus of production. The people within the Mamirauá Reserve today live in a mixed subsistence-market economy that is progressively becoming more market oriented. Traditionally, the labor of the extended family and community has been essential to maintaining economic security that depended on subsistence agriculture with some sale of excess agricultural produce. The quotations above illustrate an unintended consequence of introducing economic alternatives to these communities. There has been a trend toward altering the social organization in the extended family and community, which can be observed through examining the decline in agricultural production. Though these alternatives were intended only to supplement family incomes, the draw of lucrative, more interesting, and easier work has been powerful, especially with the younger generations. As more people have found alternative sources of income, both their desire and time available to devote to agriculture and fishing have waned. The result is a dispersal of family members as, in the case of Mamirauá residents, many involved in economic alternative programs leave their communities for extended periods to engage in wage labor. Traditional functions of the family and community are interrupted by the regular

absence of so many members. This pattern has been noted with concern by both local residents and Mamirauá staff. An obvious concern relates to the sustainability of the paid jobs and productive alternatives if the NGO and its programs should disappear. Both residents and Mamirauá staff openly expressed concern about would be left for the local people who have traded investment in traditional, subsistence activities for the introduced alternatives. In addition, the potential ramifications for indigenous knowledge, poverty, and food security are significant and merit future study.

In this section, I examine the impact of these economic alternatives on the family and community organization³⁸ and what that might mean for the long-term sustainability of the conservation effort at large. As young people are pulled away from the village to engage in wage labor or productive associations, they are no longer present in the household to assist older members with traditional activities that depend on a group effort. I examine how the lure of paid labor is impacting the extended family unit and contributing to the decline in traditional activities in areas of the Reserve most heavily influenced by NGO programs.

Change in Family Structure and Process of Production

Traditionally, the main economic activities in the region have been agriculture, fishing, and logging. In 1992, the area had been legally protected for only 2 years. At that time, Lima-Ayres, an anthropologist instrumental in the establishment of the Reserve, noted the importance of agriculture in her dissertation study on *coboclo* identity:

. . . manioc is the main agricultural crop. Although on the *várzea* it is not their main source of cash, residents also consider themselves to be farmers. This

³⁸ The terms “extended family” and “community” overlap to a great degree in study communities that are very small and have a high degree of consanguinity.

results from the importance of manioc in *coboclo* identity and culture. It is present in every meal, in different forms. . . . it is safe to generalize that all *coboclos* know how to cultivate and process it. (Lima-Ayres 1992:174)

Reserve residents describe the prevalence of agriculture, subsistence and commercial, in the years before the introduction of economic alternatives through Institute programs. One woman described how life used to be:

We had lots of fields. We planted, making sacks of *farinha* (manioc flour), selling the *farinha* outside the community. We earned the money from *farinha*. We sold squash. We planted corn, a lot of corn. We sold corn . . . that's how we lived, from agriculture, you know? All the time. Without ecotourism, without Mamirauá, without having this area that today we have, no? We lived in those days from fishing and agriculture. (*Eliana, Peixe-Boi*)

After fourteen years of program interventions, in 2006 I found many people, both residents and Mamirauá staff, describing a change in the level of agricultural activity. One resident stated:

A long time ago almost everyone here worked in the fields . . . and then came ecotourism, no? Many people left working in the fields . . . only working (wage) jobs. Now with the money that they get, they buy their food. (*Francesca, community president, Peixe-Boi*)

A resident from another community recalled the past:

There was more agriculture. There was only agriculture. There was more. (*Yaritzza, Nova Vida*)

Another woman described the difference to me in terms of what foodstuffs she had available in her house. Most of the products she describes below are derived from manioc:

We always had . . . when we had our farm fields, we always had enough in the house. Manioc cake, *tapioca* cake . . . those *tapiquinhas*, no? And *tucupi* . . . we never went without in our house, *tucupi* . . . and now when we want to eat a *tucupi*, we have to buy it in the city to have it at home. To eat a *beiju*, we have

to buy it in the city also. And so I think it's like this . . . better that we have a little field, no? for us to maintain for our necessities. . . . When we had our field, we had *goma* . . . I sold *goma*. I sold *tapioca* . . . that *farinhazinha tapioca, beiju de goma* . . . I sold it here. (*Eliana, Peixe-Boi*)

The same woman describing the present states:

I think here, no one has a farm field, no. I know that who has a field is Seu Andreas. Seu Andreas has a little field, not big. It's also small, just so he doesn't buy *farinha* . . . but he has one. Outside of him, no one else has a field here, no. (*Eliana, Peixe-Boi*)

The Mamirauá Institute Coordinator of the Agriculture program describes the change thus:

. . . there are communities like Nova Vida that are no longer characterized as agricultural communities like before, like ten years before, when they were very much farmers, the families that lived there. Today, no. Today fields almost don't exist in that community. The people almost don't plant. The economic profile changed completely . . . and I think this affects the social etc. of the communities. (*Bianca, Coordinator of Agriculture Program, IDSM*)

A resident from a third community also stated that agriculture had diminished in her community. I asked if she thought that there is less agriculture in her community. She stated:

Now, now there is less. Before the people always worked more in the fields. What my brother says is people working in ecotourism become lazy about planting [laughing]. But they plant, yes. But not a lot like how they used to plant. (*Neuza, Terra Nova*)

When I asked one young man how his family now obtains *farinha*, the form of manioc that is eaten with every meal. He described a system of pooling earnings to buy the staple food:

Here, in the house, I and my parents put money together, no? because we buy a sac of *farinha* each month. . . . We all keep working, no? One works in one

place, the other goes over there. And then when the end of the month comes, we view the money that we had worked for that month, and make a big purchase for everybody. One gives a little from there, another from here . . . when the time comes that the *farinha* is getting low, we buy again. That's how we do it. We cooperate to buy *farinha*, other things in the house too . . . (Paulo, *Peixe-Boi*)

Contributing Factors

Reserve residents are drawn away from subsistence agriculture and fishing as they engage in wage labor and productive associations introduced by the NGO in an attempt to provide sustainable livelihoods. As they become involved in the new activities they also face a number of new constraints including time shortages, physical dislocation from home, and employment commitments that limit their ability to attend to crops when necessary. Additionally, the lure of less physically demanding work that pays regularly and provides interesting opportunities is strong, particularly for young people.

The loss of time to attend to crops was a theme mentioned repeatedly in interviews with both local people and NGO staff:

In our community, in ours like the other communities that we know, there's been a diminishing in family agriculture, because the family has other activities to do, another thing to be occupied with, that before they didn't have. So, before there was only agriculture and fishing to sustain the household, the family . . . and then with the creation of the Reserve they came suggesting other activities, more organization . . . the people involved themselves more and then . . . agriculture went falling away. (*Yaritza, Nova Vida*)

When I asked this same woman on another occasion why the people in her community aren't planting like they used to, she explained without hesitation. This issue, she told me, was one that gave her and others in her community concern. The dilemma is something that they grapple with openly in community meetings. She said:

[people are not planting because] there was the suggestion of an alternative form of income, no? We had the ecotour program . . . others are enforcement agents . . . others are in managed forestry . . . and like this onward. Like this a person can't dedicate a lot to agriculture. Today it's divided, no? the agriculture and the other programs. He does one . . . or he does the other. Or maybe he does a little of each. The lack of agriculture is because of this. Because if one dedicates himself only to agriculture, only planting like before, he doesn't have time to work in these programs. And if he works in the program, what he planted will die in the middle of the forest . . . it will disappear. And so he plants only a little, just enough that he can care for. If he plants a lot, he doesn't have time to care for it. (*Yaritza, Nova Vida*)

A woman from a neighboring community told me a story where she had this very problem:

It's been two years since we've had a field, because of this work, no? our work in ecotourism . . . since then there is no time. Last year we had a lot of crops go bad. We had a lot planted . . . and then the water came, and flooded very high. In this time I was up there (at the ecolodge) . . . my field was filling with water. This year we didn't plant because it's only me and my husband. (*Eliana, Peixe-Boi*)

Not only is there a shortage of time for residents to attend to their fields once they accept work outside the community but there is also a conflict created when they are required to adhere to a pre-established work schedule generally accompanying paid labor. Farmers everywhere are at the mercy of the elements, and this is especially true in the flooded forest of the Amazon. When the water rises, a race to harvest the crops ensues. Working at the ecolodge generally requires commitments of 8-day shifts; sometimes people will stay on for two shifts, keeping them away from their community for more than two weeks. Enforcement agents and even members of the fishing cooperative also work away from their communities for days or weeks. If the floods come during one of these shifts, the farmer, now employee, is not free to rush off to save his crops. The river can rise very rapidly, and his entire crop may be washed away before he is free to return to his community.

The people make less *farinha* because they work [at jobs]. Everyone has their work. Not full-time but a little and in the wet season, during the flood, that's when there's the most [agricultural] work . . . because it's flooding. Everybody works [at jobs] and many times the big fields go bad. It isn't possible to collect everything and the water takes it away. Because . . . they have to work . . . work in the field and work there . . . work in the field and work in another place. (*Ana, Peixe-Boi*)

The substitution of organized economic alternatives for traditional agriculture and fishing has been recognized by Mamirauá staff. When discussing this trend with the Coordinator of the Family Agriculture Program, she relayed a story that pointed to the issue of time shortage for workers. She attributes the decrease in agriculture greatly to the introduction of the economic alternatives:

This happens a great deal because of the ecotour program . . . it's like the artisan program. That is, there isn't enough time. I've spoken a lot with the people and they say, 'Bianca, I even like to plant. I am a farmer and all. But the agriculture requires daily work, every day. I spend 15 days in ecotourism . . . I have activities with artistry . . . and there's not much time to do this (farming). I get home . . . in those other 15 days I have a mountain of clothes to wash . . . I have a mountain of things that are behind . . . I have to give part to this . . . part to the community, to participate . . . buy food, and ta, ta, ta, all these things . . . I don't have more time to plant. When I look up, I'm already returning to ecotourism again . . . ' (*Bianca, Coordinator of Family Agriculture Program, IDSM*)

The Artisan Program Coordinator relayed a similar story to me:

There was a time that they were having so many orders for their artistry products, many orders, that there wasn't time left for them to continue working in agriculture . . . that they had stopped planting a series of agricultural products that they used to plant for home consumption, no? Because there was so much, so much, demand for artistry products that they didn't have time. Only that in the year that followed, they felt the shortage [of food]. When the *macaxeira* season came, they didn't have *macaxeira*. *Macaxeira* substitutes for bread in the morning, no? and the banana too . . . fried banana substitutes for bread and all. . . . A number of vegetables they didn't have. And in the next year they said that they wouldn't be without these agricultural products, because the money from artistry goes to buy a series of things . . . it buys clothes . . . buys medicine . . . but doesn't buy *macaxeira* . . . doesn't buy banana. (*Marilia, Coordinator of Artistry Program, IDSM*)

Another reason driving the decrease in farming is the lure of easier, faster money. While some Reserve residents have been known to sell some of their agricultural produce, historically there has been little market for these products within the Reserve since most families farmed. Selling produce requires transporting it to an urban center outside the Reserve, which is costly, so most agriculture within the Reserve is for home consumption. Therefore, while time spent on agriculture may produce food, it offers little opportunity for cash. Ecotourism, enforcement, and the productive associations for artistry, fishing, and forestry all hold the promise of cash earnings—a strong enticement. A researcher who works for IDSM, while expressing concern about the impact of paid labor for Reserve residents, talked about how some of the projects have a lot of money to pay for local hired help. To outsiders, this wage might seem meager, he points out, but to people used to living in the forest from fishing and farming, these wages can seem very high. Also, the seasonal earnings from the logging and fishing cooperatives tend to come in large, infrequent amounts. These windfalls can be very alluring in comparison to the lesser earnings available through agriculture. Employees at the ecolodge generally go home with their earnings at the end of their shift, while earnings from the sale of a craft product are delivered to the artisan at the time of the sale. Both sources of income are more rapid than agriculture. One local woman stated plainly:

I'll work in artistry because I know that artistry also gives money . . . and even faster than the fields. The fields take longer . . .

Yet another motivator to participate in the economic programs offered through the NGO is the opportunity for a more interesting work environment and new experiences through interaction with researchers, foreign tourists, and training workshops. Bianca, Coordinator of the Family Agriculture Program, discussed the difference in working in the fields versus employment at the ecolodge:

[Wage labor] is much lighter. The work of agriculture is much harder. To be a farmer is to be a peon the rest of your life . . . in their minds. Ecotourism is very good because they get to know new people, have contact with foreigners, the money comes fast . . . and they are validated because they have knowledge of there, and everybody that arrives there thinks it's really nice and wants to know who are these people [that work there]. They treat them well . . . they want to know the story of their lives. So all this for them makes a grand satisfaction . . . impacts their self-esteem apparently. And for them, this is good. It's great. In the fields, no. In the fields they are stuck in the sun, in the rain, having to plant and after doing this . . . all that work isn't valued . . . the farmer has a mountain of this, no?

For both men and women, moving from farming to wage labor offers the opportunity for new social contexts of interaction. Participation in these economic activities expand agency through capacity-building, increased income, and enhancing self-esteem. As illustrated by the quote above, the interactions local people have and the skills they gain as ecotour employees, artisans, field hands, enforcement agents, or members of the fishing or forestry cooperatives provide the opportunity for internalization of new self-images as their identities expand to include new roles.

Generational Impacts

The change is particularly notable in the younger generations. Young people are increasingly more interested in alternative futures in lieu of subsistence farming and fishing. Traditionally, children accompanied their parents in the fields and became an essential part of the family work team. But just as adults view agriculture as “heavy work,” so do young people. One mother describes how she used to have help from her children when they were smaller but that has changed as they've grown. She says:

Before when they were all small, each one of them would carry a little *bucadinho* to help me weed and now no, all the boys don't want to help in the field any more. They think it's difficult, 'it will hurt my hand; it will make a callous in my hand; the bugs bite me; the insects are agony; there are mosquitoes . . . ' They don't want to help me anymore. And when they think there's a little work where they can be earning, they don't want to be in the

fields. And with only my husband, we can't any more. We're getting a little tired and so we're failing a little with the work. . . . Now we have a little banana . . . fields we don't have anymore because the grandchildren don't want to help and make the fields, no? (*Lana, Peixe-Boi*)

On another occasion, the same woman made a similar statement about her children's involvement. She said that her daughters are studying and don't want to help in the fields, so she and her husband stopped working in the fields. When I asked one IDSM staff member whether he thought the young people were continuing to learn to be farmers, he replied:

No. This is a total disaster. The young people don't want to plant. They prefer to be enforcement agents. Because they . . . plant? *Nossa!* This isn't a noble activity. To be a farmer [laughing] . . . it has a stain; they have a disdain for the profession, so it's not happening. And there in Peixe-Boi, the young people are not involved in agriculture. The school should be exercising this role but doesn't exercise it—incentivizing their involvement in agriculture. . . . Since this education doesn't exist and the people are getting older, and the parents aren't passing certain information that they know about agriculture to their children, the children . . . many aren't involved anymore in agricultural production . . . eh . . . it will be a very big problem. In a few years, these young people will never know how to plant things. (*Otacillio, Alternative Technology Program, IDSM*)

The two main catalysts for this trend are increased attendance of formal schooling and, as with adults, the introduction of economic alternatives. Though formal schooling is not a part of the management-related programs that are the focus of this study, it deserves mention here because it is a critical influence on the trajectory of young people. Children currently have greater opportunity for formal study than their parents did. One woman in her early forties discussed how she had little opportunity for education herself and views education for her children as very important for their future.

I don't want my son to miss a lesson . . . to stay in the fields when he has class. No, I don't want this. I prefer that he studies than is in the fields. I prefer that I

stay rather than he loses a class. Because in the future, he will feel the loss. For me no, I am already old, no? But for them, they're young . . . Today, it's not good not to know. I . . . I didn't study much. I studied a little. I have little knowledge. I know just a little, read just a little also . . . I tell the boys to read for me sometimes. (*Francesca, Peixe-Boi*)

A woman from another community also talked about how children now have more opportunity to study.

The young person today encounters more opportunity to study than we had. Before, we didn't have this opportunity. There was only until the fourth grade and then it stopped because we didn't have conditions to go to the city. And today we now have help from the municipality, no? The young person has this opportunity to study. And so, parents are giving a lot of incentive for the children to learn so that tomorrow we have a community much better than what we have today, no? . . . by having more people capacitated in their studies. (*Yaritza, Nova Vida*)

Schooling, as does the exposure to a wider array of job opportunities, influences the aspirations of young people. Francesca talks about how the young people in her family will help in the fields if they are called, but she says they don't really want to work in the fields. They prefer not to be called:

Francesca: They think it's good not to be called. They stay out the entire day hanging around . . . they only go to school, no? . . . They study. Their work is to study . . . in the afternoon they play soccer . . . but when we call them [to work in the fields], they go. But I think like this, no? . . . that they don't have much feeling for the fields or those types of things . . . there are lots of things that they don't have much interest in doing. They only go because we call them [laughing] . . . we feel like they'd rather be doing something else, no? I have this other boy . . . he says, 'I will study, study, do all my courses because it's not for me, working in the fields. For me, I will have other work.'

Kayte: This is Ezequiel?

Francesca: Yes, Ezequiel. He works as a enforcement agent too. He works there and the other little guy, he is studying as well. He says that he doesn't want to work in the field. He wants to work in what he's learning. This is why I say that they don't have much will to work in the fields. No. They go because we call them.

Francesca also emphasized that like with adults, when the young people have new options to earn money, they are drawn away from farming.

Kayte: Do the young people still have interest in working in the fields?

Francesca: Many do . . . but many no longer want to work in the fields. They now think that these jobs that they can get are easier than working in the fields.

Kayte: Jobs of what sort?

Francesca: We have some young people who work as guides, no? in ecotourism. We have some who get a little work as enforcement agents, and so this helps them . . . the money that they earn.

The trend of Reserve residents, especially young people, moving away from traditional activities creates concern with Mamirauá staff. The intention behind economic alternative programs is not to replace the traditional activities but to augment them. However, both IDSM staff and local residents notice and have concern regarding these unintended consequences. Various programs contribute to this trend, but ecotourism presents a particularly strong draw in the surrounding communities. One IDSM extension worker voiced a strong concern about the precariousness of local people becoming dependent on day labor at the ecolodge and craft sales to the tourists.

Kayte: It seems that many people are leaving agriculture. What do you think . . .

Otacillio: It's bad. I think it's bad. . . . this model of day labor that they have there [at the ecolodge], they don't have an employment commitment; they don't have the right to retirement; they don't have the right to contribute to social security . . . they don't contribute . . . it's a third sector service that doesn't offer security in their work. So they leave planting their crops . . . it's bad because if one day they are no longer day laborers, they will undergo a very big crisis, no?

The Coordinator of the Ecotour Program also responded with concern about the decline of these activities.

Nelissa: In the communities where we work, we noticed that agriculture is losing a little space because of the fact that people are having access to income . . . working with ecotourism.

Kayte: And what do you think of this?

Nelissa: . . . mostly in the younger age groups . . . I think this is a problem. . . . I think that agriculture has less . . . that they are exercising less agriculture. And fishing as well . . . I see this as a problem because the idea isn't that they substitute these activities but that they continue fishing, that they continue planting . . . so as not to impact the mode of life, no? They are farmers. Their identity is this. If the young people don't begin to plant, they don't have a connection to the land anymore . . . they lose their knowledge.

When Nelissa spoke to the community about her observations and concerns, she found that the older generations were also concerned. However, the younger people are more focused on new opportunities. When I asked how they responded to her concern, she said they didn't respond at all. They didn't appear at the meeting. The young people living close enough to work at the ecolodge are eager to work there because of the access to income, introduction to new skills and exposure to foreigners. Young people are pulled away from the village to pursue these opportunities as well as schooling. Older people, despite their awareness of the potential negative consequences of the changes, are also susceptible to the lure of these opportunities. The result is an emptying of the household of the young and those in the prime of their working years.

The absence of family members was repeatedly mentioned in my interviews as a reason for not planting. What captured my attention is the decline in agricultural production as an indicator of changing familial and community organization. I spoke with several young family members of the same household about why their family no longer planted. Each stated in their own way that working in the fields is hard and requires many hands but that now the family is dispersed, leaving fewer people available to help. Ana explained:

... today all the children are married and the grandchildren are more calm ... more lazy, no? and we don't have our mother to direct us and our father doesn't have the strength to work or to call, 'Let's go! Let's go there!' It's only those boys that work and one goes for one place, the other leaves for another ... staying over there and the field here in the *várzea*, we have to watch because when the water comes, it comes fast. It's work to not lose anything ... because if not ... if you go slowly, everything goes away ... you lose everything. ... In the past we didn't worry a lot about this because our father and mother didn't allow us to wander much. We were all at home ... all together a big group ... we had to work. Always in the fields, 'Let's go, go, go, go!' and we had to go. Now if the people are called ... ah laziness ... they go slowly ... don't want to go ... when they go they complain and so they don't want to work in the field ... and so we have to work [in ecotourism] to get *farinha* to eat. (Ana, *Peixe-Boi*)

Ana's nephew, who was 19 and lived in the same household, gave a similar explanation:

Kayte: Why did your family stop farming?

Stefan: Because ... it's lack of interest, no? There's only me alone and *Papai* [grandfather] ... the other is serving in the army over in Tefé ... and so it's difficult to work only us two in the field ... it's very heavy work. We came to an agreement, the people in the house, we'll all work now ... get a job and all, no? Almost everyone in the house works, and so we have a cooperation of 50 *reais* ... and now we don't have fields anymore. (Stefan, *Peixe-Boi*)

In addition to their elderly patriarch, this household has two young men, a teenage boy, and two young women, including Ana, who was quoted above. Each of the women has one small child, ages 3 and 4. Interestingly, the young man quoted above states that there is only his grandfather and himself to work in the fields. He doesn't mention the women or his two male cousins who also live in the house. The older of the two males, age 22, works as a volunteer enforcement agent and occasionally finds other day labor as a field hand with one of the researchers in the area. I lived next door during my fieldwork and often encountered both young men at

home but also noted that both spent periods working outside the community. When I asked the older of the two why his family doesn't farm, he responded similarly:

Kayte: Why did you stop farming?

Paulo: Because the work is very heavy. It's a work where you toil a lot . . . and in the end, you get to the time and one of us from the house . . . we work away, no? one of us is gone for one place, the other for another place, and so . . . when the day comes to work in the field we only have one or two people and so the water comes and takes the field, and so we don't take advantage of all our work, and so we lose everything. We only collect what we can and the rest the water kills. So, we decided that everybody would help to buy *farinha* . . . we left planting the field. Now we don't have fields anymore. (*Paulo, Peixe-Boi*)

This family presents a good example of the results of paid work opportunities having been introduced into the region. Though the head of this household has six grown children, as well as various grown grandchildren, who live in the village, these families no longer use the *ajuri* to get their fields cleared and planted because everyone is so dispersed. On both a community and a family level, the organization that made the past way of life possible has been drastically altered.

Consequences of Decline in Traditional Activities

The introduction of economic alternatives has produced unintended consequences for both structure and function of the family. Though the Mamirauá Institute has not intended to replace traditional activities, the increased access to cash and desirable employment has impacted the subsistence lifestyle, the generational transfer of knowledge, individual identity, the family and community organization, and the power balance between genders.

The lessening degree to which local people currently engage in traditional activities of fishing and farming is discussed with concern by Institute staff. Concerns include the lack of staple foods in households after residents have chosen wage labor

in lieu of planting crops, change in diet now that residents purchase a greater proportion of their food,³⁹ lack of food and economic security provided by the new opportunities, and loss of traditional knowledge.

Also as the family disperses in pursuit of individual economic opportunity, another function of the family unit is altered, that of transfer of knowledge between the generations. An IDSM researcher, commenting on the influence of the programs on traditional life, remarked:

And so it goes changing, changing the quality of life of the people. You don't know up to what point you're stimulating this. There [in the Reserve] they don't send the children to the lake because they now have cans to buy . . . they go to the city and buy other things too. So they don't teach the child from an early age to fish, to use a pole, to use a harpoon, other instruments for hunting and fishing. So these children go losing the ability to fish. Many times they head to the city and already are clear with another direction for life, because they no longer will survive in that [rural] environment. Because they don't know how to hunt, don't know how to fish. No? and so I think we're stimulating this a lot too. And so it has its gains and its losses. (*Paulo Henrique, IDSM*)

One young man, who eagerly works at the ecolodge, is a good example of a growing lack of interest and decrease in traditional knowledge with young people. I asked this young man (age 19) whether he fishes after having heard his elder family members complain that he and the other young men don't help out much with catching the fish for the family's consumption. His response belied a loss of skill as he admits that he and the male kin of his generation don't know how to use the spear which is necessary to kill the most highly prized fish in the region.

Kayte: Do you fish?

³⁹ Canned foods are now commonly found in households as they keep without refrigeration. One researcher who has been working in the Reserve for twenty years remarked on how she now sees people buying soda, chips and highly processed foods. She expressed alarm at the "junk" that she sees people eating now that they have more cash and access to markets.

Stefan: I fish. I fish. It's not every day because now I am sick, a little sick. But it won't be long and I'll be better and every day we'll fish. We fish today, get a fish, tomorrow we won't go, and then we'll go again the next, the next week.

Kayte: And what type of fish do you catch?

Stefan: *Tucunare* . . . *Tucunare*, *sulamba*, *carabaçu de caniço* we get. *Piranha*, do you know *piranha*?

Kayte: Yes, I think everyone knows *piranha*.

Stefan: Only not *pirarucu*, that is most difficult, no? The professional fishermen kill, every day . . . It's not likely now to see me and my brothers . . . we hardly know how to fish with a *lança*, (spear) they call it. But it's more with the arrow or pole that we fish.

Kayte: But to fish for *pirarucu*, you have to use . . .

Stefan: use a spear.

Kayte: It's large?

Stefan: Yes, it's large.

Kayte: And you don't use this?

Stefan: No.

Though some young people in their late teens and early twenties stated that they thought it would be better if their families planted more, they also seemed satisfied with the alternative of pooling income to buy food. As an outsider observing the interactions between residents and foreigners, whether tourists or researchers, I noted that the young people were clearly interested in the outsiders' views, language, possessions, and the potential opportunities these foreigners present. The older generations showed greater concern about the decrease in agricultural production. In addition to concern about no longer having their staple and favorite foods available

and children not learning traditional skills, older people mentioned concern about losing the right to use land if it is left unfarmed and the breakdown of the community work days.

The Coordinator of the Ecotour Program also mentioned a concern about the weakening of community organization due to the decrease in participation in community workdays. The initial steps to clear the land for planting require a group effort. The coming together of family and community members to help each other clear their land is called an *ajuri* or *multirão*. When someone calls an *ajuri*, others volunteer their labor for the day to clear that person's field. The field owner supplies food for the day but does not pay for the labor in cash. Instead, they then owe each volunteer a day of labor in their fields. The problem is that when people no longer have their own fields (because they earn a salary outside the community), they no longer participate in the *ajuri*. This is yet another way in which the regular absence of family and community members is altering the traditional organization of both extended family and community institutions.

Yet another unintended consequence of employment opportunities drawing people away from the village is the impact on the family structure and process created by separation. Family process has been defined as "the interactions by which families make up and maintain their unity, manage their conflicts, achieve their socioeconomic integration, and model the social and emotional personality of their members" (Sussman et al. 1999 cited in The International Encyclopedia of the Social and Behavioral Sciences 2001:5343). One family process that is inadvertently affected by engagement in formal employment is cohesion. Family cohesion refers to the commitment, support, and instrumental assistance provided by family members to one another (Moos and Moos 1986) and the degree of emotional bond between members (Lindahl and Malik 2011). Though Reserve residents in Mamirauá, almost without

exception, referred to the increase in job opportunities as a positive effect, employment away from the community comes with repercussions. The ecotour program offers employment to both men and women, which has at times created discord between spouses, generally when the husband has not been supportive of the wife working. Men have been known to disapprove of their wives working out of the community. This is discussed more fully in Chapter 5, on women's participation and leadership.

Alternately, women suffer the loss of important male labor when their male kin are absent for weeks at a time. An unintended consequence of male involvement in productive associations, enforcement, or ecotour work can be not only a lack of help with agricultural work but also the daily provision of fish, which is the staple protein in the local diet. In some families I interviewed, both husband and wife worked outside the community for extended stretches, leaving the children at home alone or supervised to some degree by relatives. The women I interviewed who work at the ecolodge spoke of various ways in which their lives have been improved through the opportunity. However, most women have children, who then must get by without their mothers for eight days or sometimes sixteen at a time. At times, these children are very young. The Coordinator of the Ecotour Program discussed the challenge for women:

Kayte: To work here the women will wait until their children are . . .

CEP: An age where they have stopped nursing . . . two or three years old.

Kayte And after, they leave the children with family in the community?

CEP: They leave them with the older children, or with another person . . . maybe the grandmother of the kids. (*Coordinator of the Ecotour Program, IDSM*)

Various women I interviewed discussed the difficulty in choosing to leave their children to work at the ecolodge.

K. Do you think it's difficult for the mothers who have little children to work at the ecolodge?

D. Yes, it's difficult. A mother to go to work and leave her children, has to have courage. Because some mothers are not accustomed . . . I wasn't, no, but now I'm accustomed. But there are mothers who think about leaving to work and think about their children. They think it's difficult to leave their children alone at home for eight days without seeing them. I was like this too but then I adjusted because I thought, I have to stay and work. I have to help to buy the things, no? . . . earn the money. (*Neuza, 28, Terra Nova*)

When I asked the manager of the ecolodge what it was like to get women to start working at the lodge, he also referred to the difficulties women have with leaving their children as well as the resistance they might face from their spouse:

The women were always more difficult [to convince to begin work], no? Because there are some who have children, no? and for the first time that they come, there are women who even arrive crying . . . they left their children at home. There are some who don't want to come; they have problems with their husbands, no? . . . the husband has distrust in the woman coming here, no? (*João, Ecolodge Manager, IDSM*)

Yaritza, who works at the ecolodge and whose husband works as an enforcement agent, remarked on an increased "separation" in the family due to the time apart. They have two teenage children, who stay home alone when their parents are away working. Yaritza relayed the following conversation during one of our interviews:

Kayte: And you work at the lodge for how many days?

Yaritza: The minimum is eight days. Eight days per month.

Kayte: And the maximum?

Yaritza: It depends on the term, depends on the number of people [tourists]. If I finish one shift and they don't have another person to substitute for me, I stay more days up to eight.

Kayte: And how is this for your children? Is it difficult being away for eight days at a time?

Yaritza: It's hard. There has been a great negative impact within the family with the coming of the working outside the house. It's caused a little of the closeness of the family that we had before to become more distant.

Kayte: And your husband he has to travel to work too?

Yaritza: Also, he has to travel . . . this also, a lot of leaving, me like him [husband], creates more distance.

Kayte: And who takes care of the kids at home?

Yaritza: They stay there. They stay there but they are older. One is 15. The other is 16.

Kayte: They stay with a relative?

Yaritza: No, they stay alone in the house. Just the two of them.

Though I was unable to investigate more deeply the effects of parental absence, I suspect there could be increased expectations for domestic labor and negative effects on schooling among these children and possibly increased unplanned pregnancies among teens.

Finally, yet another effect on the family process of decision-making is the alteration of power balance within the household as women gain access to their own income, adopt new identities as employees and artisans, travel outside their communities for trainings, work and meetings, and gain public speaking and negotiation skills through these experiences. Family bargaining is a concept that refers to a method of household decision-making based on negotiation using cooperation,

threat, or persuasion (Agarwal 1997). In contrast to earlier models of household decision-making that assumed a harmonious family unit headed by a benevolent dictator (Becker 1981), this form of household decision-making assumes that individuals cooperate within households because the benefits to individuals outweigh the costs. A number of bargaining models have been developed including neoclassical and institutional approaches (Kabeer 2001), but both approaches assume individual members with varying degrees of power who will negotiate for their interests. Differentials in bargaining power depend on a number of variables including individuals' access to resources and family contributions; needs for affiliation; gender norms such as expectations regarding division of labor; legal structures including family, property, inheritance and employment laws; and individuals' "fallback positions."⁴⁰ A fallback position refers to the degree of one's well-being given one's alternatives if cooperation in the family unit were to fail (Agarwal 1997). This holds the potential for both detrimental and positive effects on the marriage. As women's fallback position improves, they are more able to reject situations they deem intolerable. They are better positioned to use the ultimate threat of exit from the relationship. While this may improve the woman's individual bargaining power and potentially her well-being, this also introduces greater risk of open conflict and jeopardy to household membership. Various NGO staff members and Reserve residents noted that marital strain had increased in a number of households where the woman was employed at the ecolodge. There were several cases where marital dissolution was attributed to this strain. Staff members were clearly concerned that the expanded agency achieved through program participation was having a destructive

⁴⁰ Neoclassical bargaining models emphasize the parties' economic resources as determinants of bargaining power, while institutional models include a wider range of social variables from the list above (Agarwal 1997).

effect on the family unit. The majority of the women interviewed for this study who were highly engaged as participants or leaders in organized natural resource management-related activities reported initially having to overcome conflicts with their husbands.⁴¹ As mentioned in Chapter 5, the two highly active women who did not report conflict with their own husbands⁴² over their involvement were both married to men who had been instrumental in founding the Reserve and were highly committed to the goals of the Reserve. These men welcomed their wives' involvement in management-related programs and community development, though these were unusual cases.

Alternatively, having two incomes in the family can alleviate economic stress while providing the woman with increased bargaining power as an economic contributor to the family. As mentioned earlier, Yaritza reported earning twice the daily wage as her husband, who works as an enforcement agent. Like so many other women, she had to overcome resistance from her husband early in their marriage⁴³ in order to assume her current public roles, including the employment at the ecolodge. She proudly spoke of her two greatest accomplishments in life as “winning her liberty” and earning her own income. Now she is able to contribute monetarily to the household, even earning more than her husband, which has increased her bargaining power. She is also afforded a much greater deal of autonomy to choose how she spends her time, what activities she engages in, and whether she leaves the community. Now she is also able to purchase items for her children as she deems necessary. Yaritza recalled:

⁴¹ See Chapter 5 on women's participation and leadership for a more developed discussion of this topic.

⁴² They did, however, discuss the issue of male dissent as a general problem for women's organization, though they did not report experiencing it within their own marital unit.

⁴³ See Chapter 5 for further discussion.

Before I had my money, I didn't have [it] to buy my sandals, my clothes . . . the things for my children. Now I have it. So it changed.

She also talked about how it used to be for her as a child growing up in a family where her parents subsisted directly from the natural resources available. I had asked her if she felt life was better now that she had the option to participate in the economic alternatives brought in by the establishment of the Reserve. For Yaritza, there is no question. These opportunities have changed her life, and that of her family, for the better:

It's better. Much better. What I remember . . . I tell my son, my daughter, that my father was one of the best fishermen. And my mother was the one who worked the most in agriculture. But I never remember myself having a shoe that was bought new or having money in my hand that my mother had given me. Today no. Today they [children] have. I say to them, 'today you have great fortune, that you now have sandals . . . it's not much' but for example, it's like, 'Mamae, I want new shoes.' And now they have them. Or 'I want pants' or 'I want shampoo.' But my mother worked a lot, but she never had the conditions to give us these things. I don't know if it's because agriculture doesn't give [money] or that there were many children to sustain. I don't know. I only know that we didn't have. And today we have the conditions to give, no?

In addition to increased bargaining power, another household decision-making outcome due to women's increased earnings is a difference in the flow of material goods into the household. Women's earnings have been shown to be a consistent predictor of their ability to exercise agency within the household (Agarwal 1997). When women are in a position to influence household spending decisions, they have been shown to spend more money than men on household welfare, particularly children's well-being. Women's increased bargaining power can have positive effects for the collective household and especially children. Studies show women's economic resources linked to household investment in children's schooling and housing improvements (Kusago and Barham 2001; Quisumbing and Maluccio 2003), food

(Schmeer 2005), children's health (Engle 1993), and children's clothing (Lundberg, Pollak, and Wales 1997).

The differences in men and women's spending preferences in Mamirauá were consistent with findings of the above empirical studies. One IDSM staff member discussed the results of men earning relatively large sums of money:

You are creating a new being in the middle of the forest that you don't know what it is still, or if this creation is for the negative side, no? I believe that you stimulate financially these people without them being prepared, without them knowing much how to lead with the money, and with this very rapid stimulation, you know, when they kill a pirarucu, they gain \$R4,000, maybe \$R3,000 reais . . . a thing that is very hard that they gain. And then they go to the city, fill their face [with alcohol]; the women stay at home with the children; they come back there and fight with the women . . . and so it is all a chain. One behavior goes pushing the other . . . (*Paulo Henrique, IDSM Researcher*)

He went on to explain that the men are fishing pirarucu generally in the summer and then receive their earnings at the end of the year in November or December. In the period when the men receive their earnings from the pirarucu season, there are many people drunk in the community.

They fill their faces in the city . . . there are tall tales. Many times they don't know how to use this money, to guard it, to invest in a quality of life for themselves. . . . and so pronto, they spend what they earned in these months in two days. They say, 'I'll earn it again next year.' (*Paulo Henrique, IDSM Researcher*)

Another IDSM staff member explained how it happens that men tend to make the decisions about how cash is spent. He believes the situation has improved now that women are more involved in various organized activities which have boosted their confidence and increased their negotiating abilities within the household.

. . . he who sells the produce is generally the husband. At times he sells the produce and before he returns to the community, he has already spent a little . . . spent on drinking, spent on other things, no? And the wife is not there

with him, selling, guarding the earnings so that he doesn't spend everything, no? This happens with *farinha*, happens with fish, happens with other products, no? and the woman isn't always there in the moment of sale to influence where the money will be spent and how it will be spent, define the priorities, no? And with certainty, if we were to put a choice to the family between buy a boom box for the house, where generally they don't have electricity, and make a decent toilet, probably the woman would say that it's more important to have the toilet. But the man would think no. He doesn't live there. He lives fishing, he doesn't use the toilet. So the toilet for him is not important. [The woman would say] 'ah, we have to make a good kitchen for me to make food.' But he doesn't live there a lot. He lives on the lake. [She] who lives in the house is the woman, you know? So there are many things that when the woman begins to participate more . . . eh? . . . I think that will change in the future, will influence these decisions for the better.

I asked him if he's had the opportunity to see any changes in the manner in which the women speak or interact with their husbands due to their involvement with the Institute programs. He said:

Yes, there are already changes. There are changes well visible. We have women that are now more active, speak . . . in meetings, for example. Historically, we'd begin a meeting and generally the women would be there but they would not speak. Who would speak was the men. Today no. Today the women now speak. They express their opinions. I think this is important, no? and with certainty this is a result of the work of Mamirauá, of the Catholic Church, that came many years ago, no? to stimulate this liberty of the woman to help in the decisions of the family. (*Otacillio, IDSM, Alternative Technology*)

This quote illustrates well the changes in interactions between men and women that have resulted from both men and women's participation in new social-relational contexts introduced through the Mamirauá programs.

Conclusion

The integrity of the family unit is clearly altered by participation in programs related to management of the Reserve. One of the most evident changes I found is in the family structure: the increasing dispersal of household members as they leave the

community to engage in new economic activities. This change in structure has implications for the family functions of consumption and production which can be observed through a decrease in the traditional subsistence activities of farming and fishing. Household agricultural production has declined in some communities to where it's no longer the primary activity for the majority of families. The drastic decrease in agricultural production has a number of repercussions for individual, family, and community life. Staple foods are not available as they were previously and often must be purchased. The diet is changing to less healthy options that are highly processed, less nutritional, and more expensive. People are becoming increasingly more dependent on a market economy but have little long-term security as day laborers and members of productive associations where these economic activities are subsidized by external donors and managed by an NGO whose future is uncertain.

As these Reserve residents become more engaged in the market economy and have greater interaction with foreigners and urban centers, their desire for material goods has been influenced as well. It is not uncommon to see TV satellite dishes on many of the houses along the Amazonian tributaries or to hear music blaring from battery-powered boom boxes through their uncovered windows and doors. Family and community organization is altered as fewer families engage in farming and the reciprocal ritual of the *ajuri* that bound people together through the process of labor volunteered and owed. The identity of individuals and communities from farmers and agricultural villages is changing to that of day laborer, artisan, co-op member, and bedroom community.

The decline of agriculture belies a change in family structure, as it is the absence of family members in the household that is responsible for the lack of agricultural production. The children are often sent to urban centers to live with family members or strangers in order to attend school. They no longer spend the same time in

the fields that their parents did as children. The youth are drawn to the promise of lucrative, exciting, less taxing employment. They are not interested in reproducing the same lifestyle as subsistence farmers and fishermen and are not learning the skills necessary to survive from the natural resources like earlier generations. The focus for children, youth, and working adults is increasingly turning away from the family as the locus of production as these people become ever more integrated into the broader economic landscape.

These changes raise concerns for both Reserve residents and NGO staff members. Though immediate benefits are observable, no one knows yet what long-term consequences might result as the livelihoods of so many families become dependent on the imported infrastructure of the Reserve and where the identity of entire communities has become re-envisioned within this structure. What is apparent is that there is change and there are trade-offs. Many people are happy with the increases in material well-being at present despite concerns about their uncertain future. Women in particular have expressed gratitude for the employment opportunities, knowledge, training, political space, and increased cultural exposure that have afforded them new levels of bargaining power within the household, within the community, and at the level of Reserve management. Women's program participation has enabled self-empowerment as these women have re-envisioned and internalized new cultural images of womanhood such as working outside the community for wages, driving and repairing motorized boats, working as nature guides and enforcement agents, leading and speaking in meetings, and even defending their natural resources through nighttime confrontations with poachers on the river. Women's increased agency is also gained through daily interactions which now take place in these new social-relational contexts. Furthermore, women's power to contest their unequal position is strengthened by the numerous structural changes introduced by the Reserve that shape

these new social-relational contexts and inform the outcomes of gendered interactions. However, the other side of this coin is that as women become more empowered, familial interdependence and cohesion may decrease. Using Sen's (1990) "cooperative conflict" model of the household where households are sustained when both parties have more to gain by cooperating than exiting, bargaining among members becomes critical. Members cooperate because the benefits exceed the costs; however, in some instances one person's gain is another's loss. The outcome depends on one's bargaining power, which is determined by a number of factors including one's "fallback position," or the level of well-being one would have if not a member of the group (Agarwal 1997). Livelihood options are a major determinant in one's fallback position. According to Francis (2000), households with different types of livelihoods have different types of gender relations. Introducing new economic opportunities may alter the terms on which men and women negotiate for resources. Francis posits the existence of a continuum from dependence to interdependence to fragmentation within the household. Changing livelihood opportunities may shift these relations along this continuum. Interdependence is increased when the contribution of each member is valued as important to the household, but new livelihoods may increase fragmentation if members are able to access necessary assistance through relationships or resources gained outside the marriage (Francis 2000). Greater autonomy may be beneficial to women's individual well-being, but it may also heighten the risk of marital discord and the chance of reaching a "threat point" within the marital union as women utilize their increasing bargaining power to achieve their own objectives.⁴⁴ Increased individualization may weaken interdependence, which is essential to cooperative household bargaining (Gorman 2006). Observations in Mamirauá support this claim

⁴⁴ This is not to imply that women's objectives are strictly self-serving. On the contrary, they are often family and community centered.

where men's and women's access to new economic activities increases women's autonomy but also individualization for both sexes, resulting in attenuated family cohesion.

In various ways the integrity of the family is under fire as a result of the changes that have been ushered in with management-related programs. The degree of interdependence within families and communities is lessening as individuals and nuclear families become more integrated into the market economy. Women's autonomy is increased by individual earning and other benefits received through these opportunities, which brings benefits to them and often their children but is also rewriting traditional family processes of decision-making in ways that can cause familial disruption. Simultaneously, these same opportunities that result in incomes for women help relieve economic pressure on the family as overall income increases. The individual, the family, and even the community are being reshaped through participation in these programs and immersion in the introduced structure of the Reserve. One could argue that this is both for better and for worse. This also points to a number of other questions that merit further study in order to better understand the consequences of these programs and that are outlined at the end of the following chapter.

CHAPTER 7:

THE PROSPECTS OF COMMUNITY-BASED NATURAL RESOURCE MANAGEMENT IN MAMIRAUÁ

Ten years ago it was inconceivable that you'd even see a pirarucu there, let alone that everyone would be out fishing, so everyone along there at Sitio Bela Vista is benefiting directly from the fact that the Reserve has been established. The single thing we've noticed that has changed as a result of the establishment of the Reserve is that pirarucu, which are a large and very obvious fish, are now abundant in orders of magnitude more than they were when the Reserve was founded.

I have a comment based on the similarities between what I see here and other places where White, Western, Wealthy man has gone in and changed the culture in their own image because that's what's happening here: In the time that we've been working here, we've seen these people go from being subsistence farmers and fisherman to people who now rely much on money and trading, for example, this trip we've found that many of the fields have been given up and now produce far less, whereas when we [first] came here . . . I have photographs, of the whole community producing farinha, so they've changed culture. They've now got street lighting . . . they've got loudspeakers . . . they've got generators . . . are they even happy? They may have gotten what they craved but are they any better off? This is a cultural imperialism and when you see this happening elsewhere it often results in disaster. And the more I come here, the more changes I see of this type, the more fearful I am about the social welfare of the community. It's absolute imperialism. We're creating another culture like our own, and it's almost like the religious zealots that came out here last century . . . the century before, they thought that by giving Jesus to these people they would inherently be better off and happy. Well I rather doubt it. And today we're almost forcing these people, or at least we're facilitating these people, to have a culture much closer to our own. Are they any better off?

—Dr. Tony Martin, Marine Mammal Biologist,
Mamirauá researcher since 1994

Introduction

As remarked upon by Dr. Martin in the first quotation above, the Mamirauá Reserve has had its ecological successes. In everyday conversation, villagers recall the decimated fish populations of years past and attest to increases over recent decades

that compose the mainstay of their diet. It is the fish that local people depend upon every day for their sustenance. The conservation literature extols the success of Mamirauá as a model for balancing environmental protection and human livelihoods. Yet, as illustrated in the second quotation by Dr. Martin, the question remains whether this model can succeed in the long run as the very effort to protect the ecosystem and its inhabitants reshapes the social landscape in ways we are still discovering.

This dissertation has aimed at illuminating a piece of this question. In this study, I have focused on the distinct outcomes of this conservation and development model for men and women within the Mamirauá Sustainable Development Reserve, Amazonas, Brazil, and examined how gender structure is both transformed and reproduced by participatory conservation interventions in ways that have import for local social organization and, ultimately, the long-term prospects for sustaining the communities within Mamirauá. My overarching research question was: How does participatory natural resource management affect local gender structure? My intent was to understand how women's experience with participation in the conservation and sustainable development effort varied from men's and how those outcomes affected power relations between these two populations. To address these broad questions, I used Connell's conceptualization of labor, power, and cathexis as the three pillars of gender relations around which I developed three empirical lines of inquiry presented in Chapters 4 through 6 respectively. In Chapter 4, I investigated the gender division of labor in relation to natural resource use. I asked how organized, conservation-related programs change the traditional division of labor, and how gender relations have been altered by the new labor patterns. In Chapter 5, I focused on women's participation and leadership as a window through which to view women's access to power. This chapter examined the leadership opportunities that are made available to women through the conservation and development effort; the factors that condition

women's lives and influence their ability to assume leadership positions; the assistance managing agencies offer women to overcome barriers to leadership; the distinguishing social factors that separate women leaders from non-leaders; and last, how leadership enhances or impinges on leaders' well-being. In Chapter 6, I focus on family as a means of understanding the structural underpinnings of cathexis, i.e., the emotional links people make between each other and the daily conduct of emotional relationships, as defined by Connell (1987:97).

Primarily, I focus on how shifts in economic production due to the Reserve's programs attenuate family structure and alter the ways in which family members collaborate to provide support for one another. This chapter also examines the effect of women's program participation, increased mobility, and independent income on the family process of household decision-making. Last, I address the family process of socialization and the decrease in the intergenerational transfer of ecological knowledge which is linked to both the aforementioned economic shifts as well as cultural changes driven by the heightened influx of outsiders and modern amenities. All of these factors contribute to shifts in the way families interact and maintain bonds.

This study is also based on the premise that gender structure is created, maintained, and changed through the recursive relationships between individual, social-relational, and institutional levels of identity formation and social organization (Risman 1998, 2004). In each of the empirical chapters, I have addressed the research questions on these three levels and demonstrated the critical contribution each makes to the construction of gender structure.

Shifts in Gendered Labor Patterns

In Chapter 4, I examined changes in the traditional natural resource use division of labor that have occurred due to the introduction of conservation programs, especially alternative economic activities. My goal was to understand how these shifts in labor patterns alter the gender hierarchy within local communities and families. This chapter showed that the introduced programs create shifts in labor patterns that both reproduce the existing gender structure and produce change at individual, social-relational, and institutional levels. With a few exceptions, the traditional gender division of labor is reinforced at the institutional level through resource management programs that are targeted to gender-specific groups. For the most part, men and women continue to engage in activities that follow traditional gender role divisions. Men engage primarily in fishing, forestry, and heavy labor involved in agriculture, while women involve themselves in artistry, home gardening, lighter agricultural tasks, domestic labor, and employment such as housekeeping and serving meals. By systematically reproducing the traditional gender division of labor, *difference* between men and women is emphasized. As argued by Lorber (1994), it is socially constructed difference that acts as the foundation of hierarchical social systems, including gender inequality. By designing programs around gendered work, the managing agencies of the Mamirauá Sustainable Development Reserve inadvertently reinforce the hierarchical gender structure where certain types of work and workers are more valued than others; certain types of people are deemed more capable and therefore garner higher social status; and those same types of people, i.e., men, tend to also continue to have privileged access to knowledge, networks, and material resources, resulting in greater power. In addition, by supporting the traditional gender division of labor through highly gendered programs, existing inequalities are left uncontested such as women's highly

unequal domestic labor burden, which precludes their access to many of the privileges and the power that men traditionally enjoy.

However, the introduction of conservation and development programs to Mamirauá also has contributed to more gender-equitable relations through institutional-level change, as well as social-relational and individual-level change. Conservation-related programs have created opportunities for gender atypical roles as is seen when women are invited to enter male-dominated jobs as nature guides and to join in forestry groups. This is a step forward for gender equality; however, structural change is not sufficient without social-relational change as well.

As seen in many examples discussed in this dissertation, positive change for women and gender equality occurs when women are encouraged to enter the labor force, which can include traditionally male jobs. However, though this type of structural change is necessary, it is not sufficient to achieve gender equality. Discrimination at the social-relational level must also be addressed. An example is the entrance of women into jobs as nature guides. Mandatory trainings were opened to women by the hiring organization, so the positions have been made available to women through the institutional structure framing the opportunity. However, in order for women to engage in work as a nature guide, they must be willing to share their sleeping quarters with a predominately male group of guides. Both the women and their spouses have to accept that for a woman to work in that position, she must breach social norms regarding gendered space and privacy between non-familial co-workers. For married women to do this job, they must win the support of their husbands, which is problematic when they are not provided separate living quarters. Additionally, women nature guides must live and work in a male-dominated culture where, for example, swearing and sexual innuendo are commonplace. Williams (2000) argues that this is a potent type of sexual discrimination in the workplace. In the case of

nature guides at Mamirauá, opening the trainings and jobs to women is a necessary but insufficient step. The structural change is critical, yet discrimination on the social-relational level must also be removed in order for women to have equal opportunity at work.

Though there are examples such as this, where women confront barriers to equality at the individual and social-relational levels, even when structural change is working in their favor, there are also examples where the conservation programs contribute to gender equality at the individual and social-relational levels. This chapter shows that through access to their own income, the opportunities for congregating, training, and travel outside their communities, and exposure to outsiders, women are internalizing new cultural beliefs and cognitive images of femininity. Women who previously could not envision themselves working outside the home or, even more so, outside their communities for weeks at a time, are now doing so, in part due to the new employment structure in the Reserve but also due to the support these women gain through observing role models and interacting with supportive peers. These changes at the individual level support women's ability to contest inequalities in their daily interactions with spouses and other men in their lives.

Women's Participation and Leadership as Vehicles for Empowerment

In Chapter 5, I examined the opportunities for participation and leadership Mamirauá women are offered; the factors that condition their lives and influence their ability to assume leadership roles; the challenges they face; and the assistance they receive or lack. My aim was to understand what factors separate leaders from non-leaders and, ultimately, the role that managing agencies play in empowering women.

Both men and women are presented with a variety of new opportunities for participation and leadership through conservation and development programming.

Two of the main opportunities are offered through economic alternative activities and the participatory management structure of the Reserve. Some of the important determinants of women's participation and leadership in these positions include geographic isolation and physical environment; gender relations regarding travel, marriage, and child-rearing; access to individual capacity-building opportunities; familial support including child care, role-modeling, and political connections; education level; and access to income.

One of my main objectives for this chapter was to determine the factors that separate women who become leaders from those who do not. Women leaders consistently reported having supportive home lives. They either had no spouse to impede their efforts or exhibited home lives free of domestic violence, with spouses who supported and often shared in their activities, including traveling together to meetings. They tend to live in areas with higher levels of program activity. They all have family members who provide role models and political connections. These women also received child-care assistance from spouses and other family members which, in addition to the above-mentioned factors, allowed for increased mobility to attend meetings and trainings. All of these women participated in numerous training workshops and had many interactions with people from outside their village. Most have had at least some experience traveling outside the Reserve and immediate region to visit other areas of the country. They also receive some paid income, which they note was instrumental in obtaining spousal support for their political activities.

This chapter showed that institutional-level changes, evidenced in the installation of a deliberative council with a legally mandated gender quota, a political management structure based on democratic representation, the creation of various local productive groups requiring leadership and offering women the opportunity to congregate, and various instrumental capacity-building workshops, have produced

important changes in the existing gender hierarchy. Women are currently much more visible in organized activities and positions of leadership than before the creation of the Reserve. Leadership training workshops and other training opportunities where women are actively recruited also contribute to women's growing presence in public positions. Additionally, the managing agency and its staff informally assist women to overcome barriers to leadership in various ways. Many women I interviewed spoke of the critical role that encouragement from Mamirauá staff played in their decision to join organized groups, assume leadership roles, and contest unequal power relations within their households that were barriers to these activities.

However, this chapter also demonstrated the limited and uneven nature of these changes. This type of support for entering new roles and the construction of new cultural beliefs around gender are not institutionalized into most of the conservation and development programs. Despite structural support for women's leadership positions, women leaders such as those who sit on the Deliberative Council are disadvantaged on a social-relational level. That is, power imbalances between male and female, as well as local and non-local, members remain. Furthermore, restrictive gender norms, particularly those governing cultural expectations relating to marriage and motherhood, are a significant obstacle to women's leadership as evidenced in the literature as well as this field site. Existing cultural beliefs grant men a greater level of authority in the family as well as delegate the majority of domestic labor to women. The gender imbalance of power and labor within the family is one arena where managing agencies are reluctant to intervene, thus leaving women to confront these obstacles on their own.

Impacts on Family Organization

In Chapter 6, I investigated the effects of women's program participation on the integrity of the family unit. I focused primarily on women's entrance into wage labor and productive associations, which in some cases takes them out of their communities for weeks at a time. In this chapter, I was specifically interested in the effect of women's participation on their relationships with their families. I evaluated the integrity of the family by examining the effect of women's program participation on family structure, the process of household decision-making, and the family functions relating to consumption and production. I was also able to draw conclusions regarding program effects on the family function of socialization of the next generation, specifically that relating to young people's involvement with traditional economic activities. One of the most evident changes I found is in the family structure: the increasing dispersal of household members as they leave the community to engage in new economic activities. This change in structure has implications for the family functions of consumption and production, which can be observed through a decrease in the traditional subsistence activities of farming and fishing. Household agricultural production has declined in some communities to where it's no longer the primary activity for the majority of families. The drastic decrease in agricultural production has a number of repercussions for individual, family, and community life. Staple foods are not available as they were previously and often must be purchased. The diet is changing to less healthy options that are highly processed, less nutritious, and more expensive. People are becoming increasingly more dependent on a market economy but have little long-term security as day laborers and members of productive associations where these economic activities are subsidized by external donors and managed by an NGO whose future is uncertain.

As these Reserve residents become more engaged in the market economy and have greater interaction with foreigners and urban centers, their desire for material goods has been influenced as well. Family and community organization is altered as fewer families engage in farming and in the reciprocal ritual of the *ajuri* that bound people together through the process of labor volunteered and owed. The identity of individuals and communities from farmers and agricultural villages is changing to that of day laborer, artisan, co-op member, and bedroom community.

The decline of agriculture belies a change in family structure, as it is the absence of family members in the household that is responsible for the lack of agricultural production. The children are often sent to urban centers to live with family members or strangers in order to attend school. They no longer spend the same time in the fields as their parents did as children. The youth are drawn to the promise of lucrative, exciting, less taxing employment. They are not interested in reproducing the same lifestyle as subsistence farmers and fishermen and are not learning the skills necessary to survive from the natural resources like earlier generations. The focus for children, youth, and working adults is increasingly turning away from the family as the locus of production as these people become ever more integrated into the broader economic landscape.

The effect on the family is that the degree of interdependence within families and communities is lessening as individuals and nuclear families become more integrated into the market economy. Women's autonomy is increased by individual earning and other benefits received through these opportunities, which brings benefits to them and often their children but is also rewriting traditional family processes of decision-making in ways that can cause familial disruption. Data from Mamirauá show that access to new economic activities increases women's autonomy but also individualization for both sexes, resulting in attenuated family cohesion.

Simultaneously, these same opportunities produce income for women that helps relieve economic pressure on the family as overall family income rises. The individual, the family, and even the community are being reshaped through participation in these programs and immersion in the introduced structure of the Reserve.

The Implications of This Conservation Model for Gender Equality

As a result of the Mamirauá Sustainable Development Reserve, local men and women are engaging in a variety of new civic and economic roles. The outcomes for individuals, families, communities and sub-groups of the population, such as women, are varied as well and could be argued to have both positive and negative consequences. What I have argued in this dissertation is that whether these outcomes are considered positive or negative, they are both intended and unintended, and reflect important shifts in social organization. Though the reach of program activity in Mamirauá is limited and still has not touched the lives of many residents living in remote areas of the Reserve, those who are involved in programs have experienced major economic, social, and lifestyle changes. This work shows that participatory conservation projects, which introduce or reinforce exogenous institutions and cultural ideologies such as a cash economy, wage labor, democratic representation, organized civic engagement, and egalitarian ideology, create fundamental, unintended shifts in local social organization. These changes have important implications for human well-being and equality as well as long-term social and environmental sustainability.

This dissertation has demonstrated that through program participation, gender relations shift in a more egalitarian direction as women engage in new economic activities, create political space, and interact with outside social carriers. Women residing in the project area now have an array of opportunities available to them that

previously didn't exist before the establishment of the Reserve. Those who engage in these programs have attested to significant transformations in how they view themselves and their own agency, as well as their cultural beliefs about the role of women in society more generally. Men as well have showed acceptance for women's new activities in ways that they did not at the start of the Mamirauá Project. In addition, women who engage in the productive associations and market labor have increased their agency through greater economic independence as they now produce for exchange as well as domestic use. Agency also increases through the access to instrumental capacity-building and resource networks that accompany economic activities. In these ways, the presence of the Mamirauá Sustainable Development Reserve is having a strong influence on transforming the existing gender structure.

Yet, in many ways, traditional gender relations, including norms and hierarchies, are reproduced. Programs that remain focused on a traditional gender division of labor reinforce gender difference and cultural expectations regarding women's responsibility as the main caregivers for dependent children. Chapter 5 discussed in detail the difficulties small children present for women's travel to and attendance at public activities. There is no systematic, institutional-level initiative to ameliorate this dilemma.

This study also showed that though women are entering the public sphere in unprecedented ways (despite the domestic responsibilities), political space is still male-dominated. Not only are the gender-specific obstacles to attending meetings left unaddressed, but once women do succeed in gaining access to public fora, their participation is still unequal to that of men.

Programs also do not formally address barriers to women's participation and leadership at the social-relational level within marriages and families—both primary production sites of gender inequality. Women are left to their own devices to contest

inequality within the private sphere. The introduction of exogenous institutions and ideologies, which focus on institutional-level, public forms of social change and individual-level capacity-building, not only create change in community-level social organization and individual instrumental capacity but also inadvertently produce change within the private spheres of individual identities, marriages, and families, yet programs do not formally attend to this level of social relation. This creates new tensions within families and communities which are, at best, informally and erratically addressed by individual staff members. So, women are exposed to new opportunities and new visions for the future, yet one of the most ubiquitous, intransigent barriers to gender equality is the cultural belief in the ultimate authority of the husband, which is left unaddressed at the institutional level.

Understandably, there is concern about institutional interference in the private sphere; however, I argue that, first, societies do this already when they legally codify individual rights such as laws against domestic violence, and second, as demonstrated repeatedly in this dissertation, the institutional-level changes introduced to the Reserve such as new economic activities, which are deemed not only acceptable but as positive advances, have repercussions that reach into the private sphere of families and marriages, even though this is not necessarily intended. Furthermore, some of these repercussions are likely to be viewed as positive, such as increased earnings for women and family as a whole; yet others may not, such as increased tension between spouses when navigating the creation of new cultural norms, the attenuation of the family unit, the loss of traditional economic activities, and the decrease in the transfer of intergenerational knowledge. Providing jobs for women, for example, can both stabilize and destabilize families, as shown by successful women leaders. These women had to pass through a period of struggle in facing resistance from spouses. Why should programs set women up to face this struggle by offering them

institutional-level change in the form of jobs, leadership positions, or other opportunities, yet not assist them in dealing with the very real obstacles to and ramifications of accepting these opportunities? I argue that if gender equality is a project goal, then it must be formally addressed not only on the institutional and individual levels but also at the social-relational level. Otherwise, development efforts are likely to create unintended and *unattended* disruption within families.

Returning to the question of the prognosis for maintaining women's new roles within the Reserve—much depends on the continued existence of the Reserve structure, its programs, and the opportunities for exposure to social carriers that the Reserve brings. The institutional changes are as strong or weak as the presence of the Reserve itself. However, the opportunities created at this level, such as leadership positions, have also affected men and women on individual and social-relational levels in ways that are unlikely to be undone even should the Reserve cease to exist. Women have left their homes and domestic roles to enter the world of market labor and public civic engagement. In order to do these things, they had to contest and ultimately alter the pre-existing gender hierarchy in their families. In an effort to conserve its natural resources, the people of Mamirauá have stepped into a more modernized world, and in doing so, have also made progress toward gender equality.

Though I suspect that the presence of the Mamirauá Reserve has altered gender relations in meaningful and lasting ways, so much of women's new roles, like men's, are highly dependent on the continuation of the Reserve in its current form. Most of the opportunity for market work, and even the sale of artisanal products, depends on the maintenance of the Reserve structure, as do the opportunities for congregation, leadership, training, travel, and cultural exposure that are results of the Reserve. This leads us to the question of the sustainability of the Reserve itself.

The introduction and reinforcement of these modern institutions creates such fundamental shifts in social organization that the prospects for long-term sustainability of the Sustainable Development Reserve *model* are questionable. Examples of concerning changes include shifts in household structure and the attenuation of family cohesion as adults of both sexes leave their communities for days and weeks at a time for Reserve-related jobs; decreased agricultural production; a decline in communal traditions of labor reciprocity resulting from the loss of available adult workers within the household and community; loss of intergenerational knowledge regarding natural resource use and traditional economic activities; as well as shifts in livelihood and material aspirations among younger generations. The skills that allowed these rural communities to survive in such a challenging physical environment are being lost as people move into wage labor and become entrenched in the market economy. When asked whether agricultural production continues to the same degree as in the past, the Ecotour Program Coordinator stated, “No. Agriculture is losing a little space because people are accessing wages . . . they are working with ecotourism.”

The great irony is that this conservation model strives to include human inhabitants but it introduces, perhaps unintentionally, the Western model of work and family—a model that discourages reproduction of the subsistence-based economy and the interdependence of the extended family—both factors that have historically been critical to human survival in this environment. Instead, the new model encourages individual autonomy and children to adopt new livelihood strategies as adults, often entailing leaving the Reserve altogether—which defeats the purpose of including the human inhabitants of the region in the first place. Considering the dramatic social changes underway within the Reserve communities, one has to wonder whether the Sustainable Development Reserve is likely to sustain itself long-term. In effect, the

first twenty years of program activity in Mamirauá has shown a notable decline in subsistence production and other concerning changes.

Young people, in particular, who no longer want to fish and farm, exhibit shifts in livelihood aspirations. When I asked my field assistant whether she thought the young people in the Reserve will want to continue with the same way of life, she responded:

Ana: We have many people who don't think like that now. They say that now is the modern world. They're wanting to be in the modern world . . . modern you see. Many people . . . I don't know about the ones up above [farther into the Reserve] . . . it's more distant from the city, and maybe the people think differently, no? But for those who live near to the city, they already think like this. For example, our sector is close to Alvarães. Just the boats for students . . . we have four boats from the municipality . . . so there they already have a different vision. They are already studying with another vision. Over there in Nova Vida, just there alone, they have almost 50 students that go to the city every day to study.

I asked whether she thought these children will want to stay inside the Reserve. She said:

Ana: They might stay, but I think that they already have a different type of idea. They might be teachers, or study in some other area. I don't think that they are going to want to go to the fields much. Because we have many people who work in the fields but they work in the fields, thinking of something else.

As outlined in Chapter 6, the changes in social organization within the extended family and community, such as the dispersion of adult family members pursuing wage labor, are resulting in a loss of reciprocal labor tradition necessary for agricultural production and other endeavors requiring large groups of workers. One of the scientists with a long history of research within the Reserve recounted a story to me that further illustrates this point:

Seu Fransico was telling me that he was planting, I don't know how many kilos of corn, and he said that not a single son or young lad wanted to be with

him, so he did it all by himself and he said ‘They don’t want this kind of job anymore. They don’t want to work in the field, they don’t want to be a fisherman. They want to work for ecotourism. They want to work for the project. They want to work in Tefé . . . ’ (Dr. Vera Da Silva, Project Boto Co-PI)

The loss of traditional economic activities, skills, and knowledge is not a new story. It has been the case across the globe where agricultural societies have modernized. But it is important that these links between conservation initiatives, modernization, and unintended changes in social organization are not overlooked.

These changes present further reason for concern about whether years in the future Reserve communities will still fit the requisite characteristics upon which the Sustainable Development model was created. In addition, the degree of continued dependency on outside funding, management, and technical assistance is yet another reason for concern about the sustainability of the Reserve, its programs, and the subsequent shifts in social organization, including those favorable for gender equality. Mamirauá has a long history of external financial, technical, and administrative support. Various staff members expressed concern about local capacity to maintain the Reserve and its programs without this influx of external support. This concern is exemplified in comments by Dr. Martin, an independent researcher working in Mamirauá:

This is seen as a flagship Reserve for many donors, Western donors in the UK and US, because it’s the first of its kind and it’s viewed as a sexy place. The WCS in the States and the UK government development arm . . . they put in a huge amount of money, much more than they do now, for protection because they wanted to get it to fly and be on a firm basis so that other countries, and other places in Brazil, will look at this and say, ‘Yeh, this is working’ but the fact is it’s only working because they’re putting in millions and millions of dollars that they pour into this place to make it, and to this day if you pulled away the infrastructure, the expensive infrastructure, I believe it would collapse.

On another occasion he stated:

It's fine while there's money coming in. These people compared to twelve years ago, you know, they get electricity, they get gasoline for their boats . . . generally their standard of living has gone up. But their standard of living has gone up not by virtue of the fact that there are more pirarucus here, it has gone up by virtue of the fact that there's been millions of dollars being put into this place. And they are all benefited directly or indirectly. You know, from people like myself coming in, and you know, hiring people to cook . . . Or for example, we are giving long term employment to Henrique . . . you come in and you employ a boatman . . . I think it's fine but the idea is that it should be sustainable in its own right, you know . . . the concept at the beginning was that these people would embrace the culture, embrace the idealism, the ideology of it all and say 'Yes, this is the way forward . . . This the way we now are gonna live our lives.' That is complete bollocks. They're all just out to get whatever they can. You know, if they think they can take the last pirarucu in the reserve without anyone else seeing it, there will be a fight for it. . . . I think the concept of the Sustainable Development Reserve is the luxury of white, Western, wealthy people. It's not something that these people here believe in as a concept except that it gives them more money or more product. Now, as long as they're doing better than they would have done before they'll pay lip service to it. Unless they always are gaining, I think it will be a problem.

This quotation not only attests to the dependency of residents on outside support but also points to another issue in CBNRM, which is the question of whether local people really buy in to the conservation ethic driving the economic programs they benefit from. This was not the topic of this study, but I was able to observe while in the field the many ways in which local people have come to view managing agencies as benefactors. Both environmental concern and local conceptions of autonomy are important issues in need of further research, as the idea of sustainable conservation and development depends on the commitment and independence of local actors.

The dramatic social changes identified through this study raise the question of the long-term viability of this community-based model, which is not only intended to support human habitation but is dependent on these inhabitants to provide local protection of resources from outsiders. Before the establishment of the Mamirauá

Sustainable Development Reserve, the area's fish population was decimated by commercial fishermen from surrounding areas. The Reserve's area is far too vast to be adequately patrolled and protected by state employees. As such, an important concept in this model is the symbiotic relationship between local inhabitants and their environment. The dramatic social changes documented in this study beg the question of whether the Reserve could be maintained if either local people leave in sufficient numbers to make new lives in urban areas or if local economies change to the extent that the desire and ability to live sustainably within the protected area is undermined.

APPENDIX A:

RESEARCH INSTRUMENTS

Gendered Resource Mapping (and benefits analysis) Community Level
Adapted from Diane Rocheleau, Power, Process, and Participation: Tools for Change, Slocum et al. 1995 and Tools of Gender Analysis, Thomas-Slayter et al., 1993)

Purpose:

In order to understand how restrictions on natural resource use affect reserve residents, it is necessary to first document which resources are used, by whom and for what purposes. Gendered Resource Mapping (Rocheleau 1995) conducted separately with men and women will be used to understand how resource use and control may vary by gender. The mapping exercise will also augment documentation on the gendered division of labor, the impact of technology and park programs on men and women, and gendered space at the household and community levels. This tool can bring to light differences in perceptions between community members and outsiders which are especially salient to co-management strategies of conservation where policies are developed collaboratively and successful implementation depends on cooperation more than enforcement. The process of conducting Gendered Resource Mapping relies on first establishing an inventory of major landscape features, land uses and land users. With this information established, participants create maps of community lands indicating major vegetation types, land uses, tenure and access, locations of specific resources harvested, sources of labor, and beneficiaries. From these maps, a matrix can be generated organizing land uses in relation to laborers and decision-makers.

Process: Focus Group,

Sample: One men's group (8 people), One women's group (8 people)

Step1: List the major classes of vegetation, land use and tenure. For example:

Forest
Woodland
Perennial crops
Annual crops
fallow
bare soil
river banks
paths
conservation areas
gathering/collecting areas
grazing areas
gardens

homesteads
fences
property boundaries
public markets and meeting places

Step 2: List land users

Who are the land user groups? Identify the land user groups in your particular context. They may be as simple as men or women, or a combination of male/female and child/adult/elder. They may also encompass livelihood, tenure and social groupings. List and label the user groups according to locally-defined social categories.

e.g.	adult men/women	artesaos/artesas
	male/female children	pessoas do projeto do manejo florestal
	male/female elders	pexeiros/pexeiras
	farmers/fishers/hunters/artisans	

Step 3: Make Map (general)

On a separate sheet, sketch the distribution of the major landmarks, land cover, land use types in the local landscape. (label with different colors)

Step 4: Fill In Map (specific)

Make detailed sketches and inventories. Sketch in symbols of plants, water sources, livestock, building, etc. Be species/product specific. Take notes on use of each species used. Keep list to match symbols with species.

Step 5: Add Users/laborers

Note who uses each resource. To do this, discuss separately each resource listed on the map. For each resource, mark on the map the land user/laborer group. Distinguish between different levels of use, for example, those responsible for providing resources to the family and those responsible for maintenance of resources. Be sure to distinguish between who implements management practices (users) and who makes the management decisions for each resource. Mark with color-coordinated thumbtacks for categories, e.g. men only, women only, both, entire family, entire community, etc.

Who uses the particular resource? Why?

What are the terms of access?

Who works with (processes) the collected resource?

Step 6: Add Decision-makers/Beneficiaries

Mark on the map which groups control decision-making for use and management of resources.

Who owns the resource legally?
 Who has de facto control of the resource?
 Does this person have right to dispose or solely renewable use rights?
 Who in the family/group/community benefits from the use/sale of the product or service?
 How is it used?
 Is the benefit derived from subsistence use or from sale?
 Where are products sold?
 Who produces them and who sells them?
 What inputs are used?
 What are the sources of these inputs?
 Who decides how it should be used? i.e. who controls the use or sale of the products, (including goods, services, and cash)?
 Is it the same as or different than those who benefit from its use?)
 Who controls the money if it is sold?
 Who decides how to spend the money?

Step 7: Make Matrix (done later by researcher and re-checked with participants later)
 On separate sheet of paper, list all resources on one axis. On other axis, list all users, laborers, and resource controllers. Note on the matrix which places, plants, and products are controlled, used and managed by different groups (women, men, children, farmers, land owners vs. gatherers). To fill in the matrix, denote groups' (e.g. men's or women's) labor input (L), control (C), and responsibility to provide (R). When discussing control, distinguish between control over renewable use vs. disposable use and legal control vs. defacto control.

Step 8: Discussion

Use the sketches and tables to guide planning discussions with individuals and community groups or with technical personnel in order to incorporate the distinct needs, interests and concerns of women and men in resource management.

Who exchanges what with whom?
 On whom do the households/communities rely for support? What support?
 Who in the community is not part of any exchange networks? Why?
 Why is the good/service produced here? (tradition, NGO influence, influence from other organization)

How do NGO programs affect resource distribution, DOL, benefits, access/control?

If the production of the good is influenced by any of the NGO projects, discuss why certain groups are involved. How did the involvement come about? Was participation

sought out by the user group or suggested by the NGO? How do people feel about this particular group's participation (and the exclusion of other groups)?

Are there particular groups that have more benefits or more decision-making power than others? Why is this?

Are there other (non-NGO) initiatives in the community that produce goods/services? Who benefits from them? Who makes decisions?

Gendered Resource Mapping (and benefits analysis)

Household Level

Adapted from Diane Rocheleau, Power, Process, and Participation: Tools for Change, Slocum et al. 1995 and Tools of Gender Analysis, Thomas-Slayter et al., 1993)

Purpose:

In order to understand how restrictions on natural resource use affect reserve residents, it is necessary to first document which resources are used, by whom and for what purposes. Gendered Resource Mapping (Rocheleau 1995) conducted separately with men and women will be used to understand how resource use and control may vary by gender. The mapping exercise will also augment documentation on the gendered division of labor, the impact of technology and reserve programs on men and women, and gendered space at the household and community levels. This tool can bring to light differences in perceptions between community members and outsiders which are especially salient to co-management strategies of conservation where policies are developed collaboratively and successful implementation depends on cooperation more than enforcement. The process of conducting Gendered Resource Mapping relies on first establishing an inventory of major landscape features, land uses and land users. With this information established, participants create maps of community lands indicating major vegetation types, land uses, tenure and access, locations of specific resources harvested, sources of labor, and beneficiaries. From these maps, a matrix can be generated organizing land uses in relation to laborers and decision-makers.

Process: household interview

Sample:

Biographical Information:

1. Name:
2. gender:
3. Birth date, birth place, number of years in this community

Step1: List the major classes of vegetation, land use and tenure. For example:

Forest

Woodland

Perennial crops

Annual crops

fallows

bare soil

river banks

paths

conservation areas

gathering/collecting areas

grazing areas
gardens
homesteads
fences
property boundaries
public markets and meeting places

Step 2: List land users

Who are the land user groups? Identify the land user groups in your particular context. They may be as simple as men or women, or a combination of male/female and child/adult/elder. They may also encompass livelihood, tenure and social groupings. List and label the user groups according to locally-defined social categories.

e.g. adult men/women
 male/female children
 male/female elders
 farmers/fishers/hunters/artisans, etc.

Step 3: Make Map (general)

On a separate sheet, sketch the distribution of the major landmarks, land cover, land use types in the local landscape. (label with different colors)

Step 4: Fill In Map (specific)

Make detailed sketches and inventories. Sketch in symbols of plants, water sources, livestock, building, etc. Be species/product specific. Take notes on use of each species used. Keep list to match symbols with species.

Step 5: Add Users/laborers

Note who uses each resource. To do this, discuss separately each resource listed on the map. For each resource, mark on the map the land user/laborer group. Distinguish between different levels of use, for example, those responsible for providing resources to the family and those responsible for maintenance of resources. Be sure to distinguish between who implements management practices (users) and who makes the management decisions for each resource. Mark with color-coordinated thumbtacks for categories, e.g. men only, women only, both, entire family, entire community, etc.

Who uses the particular resource? Why?

What are the terms of access?

Who works with (processes) the collected resource?

Step 6: Add Decision-makers/Beneficiaries

Mark on the map which groups control decision-making for use and management of resources.

Who owns the resource legally?
 Who has defacto control of the resource?
 Does this person have right to dispose or solely renewable use rights?
 Who in the family/group/community benefits from the use/sale of the product or service?
 How is it used?
 Is the benefit derived from subsistence use or from sale?
 Where are products sold?
 Who produces them and who sells them?
 What inputs are used?
 What are the sources of these inputs?
 Who decides how it should be used? i.e. who controls the use or sale of the products, (including goods, services, and cash)?
 Is it the same as or different than those who benefit from its use?)
 Who controls the money if it is sold?
 Who decides how to spend the money?

Step 7: Make Matrix (done later by researcher and re-checked with participants later)
 On separate sheet of paper, list all resources on one axis. On other axis, list all users, laborers, and resource controllers. Note on the matrix which places, plants, and products are controlled, used and managed by different groups (women, men, children, farmers, land owners vs. gatherers). To fill in the matrix, denote groups' (e.g. men's or women's) labor input (L), control (C), and responsibility to provide (R). When discussing control, distinguish between control over renewable use vs. disposable use and legal control vs. defacto control.

Step 8: Discussion

Use the sketches and tables to guide planning discussions with individuals and community groups or with technical personnel in order to incorporate the distinct needs, interests and concerns of women and men in resource management.

What are the family's formal and informal credit sources?
 Who has access to credit? Why? How much?
 What are the primary sources of income?
 Who is responsible for which household expenses? (resp. for managing vs. resp. for producing income)
 Who exchanges what with whom?
 On whom do the households/communities rely for support? What support?
 Who in the community is not part of any exchange networks? Why?
 Why is the good/service produced here? (tradition, NGO influence, influence from other organization)

How do NGO programs affect resource distribution, labor patterns, benefits, access and control?

If the production of the good is influenced by any of the NGO projects, discuss why certain groups are involved. How did the involvement come about? Was participation sought out by the user group or suggested by the NGO? How do people feel about this particular group's participation (and the exclusion of other groups)?

Are there particular groups that have more benefits or more decision-making power than others? Why is this?

Are there other (non-NGO) initiatives in the community that produce goods/services? Who benefits from them? Who makes decisions?

Crencas Acerca do Genero

Quais as atividades cabem ao homen?

Quais as atividades cabem a mulher?

Porque?

Como deve ser uma mulher respetavel?

Um home respetavel?

A que idade deve casar?

Deve casar se engravidar?

Pode ir a festas depois se casar?

Como deve atuar na festa?

Quando uma mulher engravidar, quem tem mais responsabilidade para o nene? A mulher ou homen?

Importaria se o homen e a mulher sao casados?

Quais sao as carateristicas dum bom marido?

De uma boa mulher?

Quais atividades deve fazer uma mulher respetavel?

Quais atividades deve fazer um homen respetavel?

Quais atividades devem ser evitados por uma mulher respetavel?

Por um homen respetavel?

Quais sao as carateristicas duma boa mae?

Dum bom pae?

Que deve fazer a mae pra seus filhos?

Que deve fazer o pae pra seus filhos?

Qual e bom numero de filhos?

Prefere ter menino ou menina?

Para que o homen e mais valorizado na sociedade?

Para que a mulher e mais valorizada na sociedade?

(Para que a sociedade precisa ao homen/mulher?)

Quem dao melhores lideres? Os homens ou as mulheres?

Por que?

Em qual situacoes as mulheres liderem?
(em quais atividades as mulheres lideram? Em quais atividades os homens?)

Sao os homens melhor para resolver alguns problemas e as mulheres para resolver outros? Como e?

Quem e mais ativo nos grupos?, homem ou mulher?
A mulher e mais ativo em que grupos? Que facam elas em esses grupos?
O homem en que? Que facam eles?

Quem e mais ativo nas decisoes sobre o manejo dos recursos naturais na comunidade, homem ou mulher?

Quem e mais ativo nas decisoes sobre o manejo dos recursos naturais na Reserva em geral?

Quem e mais intelligent?

Quem sabe mais sobre:
A saude
A medicina tradicional (remedies caseiros)
A politica da comunidade?

Que tem mais tempo de lazer?
Por que?

Quais sao os pontos fortes da mulher?
Do homem?

Quais sao os pontos fracos da mulher?
Do homem?

Quais problemas tem enfrentada os homens atualmente?
As mulheres?

Quais sao as diferencas entre as problemas que enfrentem as mulheres e os homens hoje?

Do que mais precisam as mulheres para melhorar as suas vidas?
Do que mais precisam os homens para melhorar as suas vidas?

Field Note Sheet (for Reserve Residents)

Interview Theme:

Interview # ____ (with same narrator)

Narrator name:

Date of birth:

Place of birth:

Number of years in community:

Main economic activities:

Marriage status:

children:

Educational level:

Religion:

Interviewer's name:

Date of interview:

Place of interview:

Physical setting, others present, narrator's demeanor:

Is there something unique in this interview? (perspective, rich detail):

Kinship ties:

Links to Institute:

Community Roles:

Current Natural Resource Use

Changes in Use

Problems with Regulations

Gender Relations:

Impacts of Programs:

Field Notes- Program Coordinators

Interview # _____

Narrator name:

name:

Length of employment:

Work in Peixe-Boi/Nova Vida

Place of interview:

Interviewer's

Date of interview:

Physical setting, narrator demeanor:

Is there something unique in this interview?

Objective of Program:

More contact with: men women

Division of labor among participants:

Residents employed by program? yes no

Division of labor:

Gendered Participation in Mamirauá Project:

One gender has more power: yes no

Expectations regarding behaviors:

Are gender relations considered in planning:

Narrator feels necessary: yes no

Funding Sources:

What's working/What's not:

Problems with Regulations

Individual Interview Schedule

Biographical Information:

1. Name:
2. gender:
3. Birth date, birth place, number of years in this community
4. Father's name, mother's maiden name, siblings
5. Father's work, mother's work
6. Marriage (date, spouse), legal status
7. children (names, date of birth)
- 7a. How many people live in the household
8. occupation:
9. years of schooling:
10. religion:

Objective 1: Resource Use

- 10a. Describe to me your daily routine.
11. Describe for me your responsibilities in the family.
12. Describe your spouse's responsibilities.
13. Do you think there are differences in how men and women use the natural environment? If so, in what ways?
14. What type of natural resources does your spouse use regularly?
15. What type of natural resources do you use regularly?
16. Does your family own this land where you live? Do you have a title? If so, in whose name?
17. Who decides how your land is used?
18. Do you use communal land to gather resources or for production?
19. If so, do you have to ask permission from anyone to do this?

Objective 2: Gender norms & Power relations

20. Do men and women have different roles in the family? How so?
- 20a. Why? What if mom did that? Or dad?
- 20b. What would the family think? The community?
21. Do men and women have different roles in the community? How so?
22. Are there any positions in the community that are exclusively filled by one sex or the other?

23. In your opinion, are there behaviors that are specific to men and women? An example would be how they dress. Are there others?
24. Who makes decisions in the home?
- 24a. Are there certain things that you decide and others your spouse decides?
25. In your home, who earns an income? Who determines how it is spent?
26. Who makes decisions in the community?
27. Who are the representatives for the reserve from this community?
(Are there or have there ever been any women?)
28. Do you go to community meetings? Park meetings?
If so, do you participate?
29. Are there things that you need to ask your spouse's permission to do?
30. When you leave the community to go to town, do you ask your spouse if you can go?
31. How much free time do you have to relax?
32. If all your work is done, what do you choose to spend your time doing?
- 32a. Do you help your spouse with their work?
- 32b. Does your spouse help you with your work?

Objective 3: Impact of conservation project on reserve residents

Resource restrictions

33. Are you familiar with restrictions regarding natural resource use inside the Reserve? What are they? (What resources are affected?)
34. How has this affected your family? (What changes have occurred?)
35. Has it had a different affect on you vs. your spouse? If so, how?
36. How do the restrictions affect the community as a whole?
37. How do you think the community in general feel about these restrictions?
38. What do you think of them? Are there some that are particularly good or particularly bad? Some that you'd like to see remain or changed?
39. Do these restrictions affect your income?
40. What changes have occurred for your family since these restrictions came to be?
41. What changed for the community?

Community development

- 41a. What type of community development projects have been implemented in your village?
42. How does the _____ program affect your family? Is it more help to you, your spouse, or your children?
43. Has it affected your family income? Specifically, whose income in the family?
- 43a. Has it affected your health or general well-being? Or that of your family?
44. Has this had any effect on how you use the natural environment?
45. Are there things you'd like to see changed?

Economic alternatives

46. Are you or your husband involved in any of the Mamirauá Institute economic activity programs? If so, which?
- 46a. Why?
- 46b. If there are differences in which programs you participate in, why is this so?
47. For how long have each of you been involved?
48. How has this affected your family?
- 48a. Does it help you, your spouse, your children, the community, or some other group more?
49. How has participation affected your income?
50. Has it had any effect on how either of you interact with the environment?
51. Are there any things that you'd like to see changed or remain the same?
52. How many women and how many men are in this group with you?
53. Who decides how things will be done?
54. Does everyone contribute the same amount and type of labor or is there variation?
If so, please describe.

Objective 4: Changes in gender norms and power relations

55. Do women and men have the same responsibilities these days as they did before the conservation program began work in your community?
56. Has participation in conservation programs affected how you make decisions within the household. (*for example, who has earned income and who determines how it is used*)
57. Has participation in conservation programs affected the way in which you engage with the rest of your community? (*for example, do you go to more meetings now than before? Do you express your opinions publicly?*)
58. Do you feel the presence of the conservation program has affected women's ability to express and fulfill their needs?
59. Are women's roles (in the family, in the community) the same or different than they were . . . say . . . 15-20 years ago? (*For example, are their jobs and responsibilities the same as before? What about positions in the community?*)
60. What about men's?
61. If there have been changes, do you see any connection to the activities initiated by the conservation organization?
62. Twenty years ago, could women own land here? Was it customary?
63. What about today?
64. Have modes of dress changed in that time?
65. When you were growing up, who made decisions in your household?
66. Were there some decisions made by your father exclusively, others made by your mother exclusively, and some made together? Please explain how the decision-making process worked in your home.
67. When you were growing up, did women participate in community politics and decision-making? Did they go to meetings?
68. How did women make their needs known to the community?

69. When you were growing up, what were your mother's responsibilities in the household? What were your father's?

Objective 5: Linking changes to norms and environmental behaviors

70. When you were growing up what types of resources did your mother gather from the forest and river?

71. What about your father?

72. Are these things still gathered/hunted today? Please explain which ones yes, which ones no.

73. Why do you think these changes have occurred?

74. What types of conservation activities do you participate in today?

75. How did you get involved in these activities?

76. What activities are women and men expected to do? Why?

77. What activities that specifically impact the environment?

78. What activities should be avoided by respectable men and women?

79. Have these activities changed over time?

80. What should a respectable man/woman BE like. (How would you describe a respectable man/woman)?

81. Who has more leisure time? Why?

82. What makes a good husband/wife? Daughter/son? Father/mother?

83. What are women and men most valued for?

84. Who make better leaders? Why?

85. When do women and men lead? Who follows?

86. Who is better at solving problems? Why?

87. Who is more active in groups? What types of groups?

88. Who is more active in natural resource management decisions? Within the community? Reserve wide?

89. Who is more intelligent? Why?

90. Who knows more about agriculture, health, community practices, medicine? Why?

91. What are the strengths and weaknesses of men and women?

92. What problems do women and men face today? Are their differences between them?

93. What do women and men need most to improve their lives?

94. What roles do women and men play in village development? In natural resource management?

95. What skills do men and women have that contribute to village development? To conservation of the reserve?

96. What are the difficulties and benefits of working with men? With women? With men and women separately or together?

97. What are the most important needs of women and men in village development?

98. How do women and men's use of the environment differ?
99. Are these perceptions universal truths and/or valid representations of real life?
100. Do you know of women and men who do not match the stereotypes? How do they differ? Why?
101. How do women's and men's perceptions differ? Why?
102. What role do these perceptions play in the culture?
103. What (and whose) values or interests do these myths represent?
104. How do these myths both empower and disempower individuals and groups?
105. Who benefits and who loses from particular myths? Why?
106. Where did the myths come from?
107. Are these perceptions of women and men changing? If so, how and why? Has the NGO influenced these changes? In what ways?
108. How do these perceptions influence how people act?
109. What gender stereotypes are promoted by certain institutions such as the NGO, the church, the municipal government, local government? Why?
110. What impacts have these myths had on the lives of women and men, and their role in community development?

Individual Interview

Informacao sobre uso dos recursos

Qual sao suas responsabilidades que tem que fazer tudo dia? Descreva sua rotina

Voce tem roca? Que planta? Quem mais trabalha nessa roca?

Voce tira alguma planta da mata? (medicina, mel, fruta)

Voce casa? Quantas vezes por mes?

Voce pesca? Quantas vezes por semana?

Ha alguns recursos que as pessoas usava antigamente que agora nao usam? Por que?

Labor

Voce trabalha com alguma programa do Instituto? (por quanto tempo?)

Qual sao suas responsabilidades nesse trabalho?

Que beneficios voce recebe para fazer isso?

Voce recebe uma renda por esse trabalho?

Quanto tempo voce dedica a esse trabalho por semana?

Quem cuida a seus filhos enquanto voce trabalho?

Que voce fez anteriormente para trabalho?

Voce recebe uma renda de algum otro trabalho?

Essa programa ajuda a voce ou nao ajuda muito?

Quem beneficiam mais dessa programa?

Qual programas do Instituto (que tem aqui nessa comunidade) voce acha tinha afeitado o mais a sua familia?

E a comunidade em geral?

Political representation

Voce vai as reunoes comuntaria?

Voce fala nessas reunoes? Voce sente que outras pessoas na comunidade dao valor a suas opinioes?

Voce vai as reunoes setoriais?

Uma vez, voce foi a assembleia geral?

Que voce acha da assembleia? Quem facia as decisoes?

Uma vez voce foi como representante da comunidade?

Uma vez voce tinha uma posicao na directoria da comunidade?

Qual sao as responsabilidades dessa posicao?

Voce tem outra responsabilidade para a comunidade?

Voce recebe uma renda para esse trabalho ou nao?

Relacoes de Genero

Tem as mulheres e os homens responsabilidades na familia diferentes? Qual sao?
Por que voce acha e asi?

Existe algumas coisas que so as mulheres fazem?

Outras coisas que so os homens fazem?

Tem as mulheres e os homens responsabilidades na comunidade diferentes?

Qual sao?

Por que voce acha e asi?

Existe algumas coisas que so as mulheres fazem para a comunidade?

Otras que sao os homens fazem para a comunidade?

Voce acha que existe diferencas entre como as mulheres e os homens usam os recursos naturais?

Quem tem mais tempo de lazer, o homem ou a mulher?

Por que e asi?

Perguntas sobre a Reserva

Todos foram de acordo com a Reserva no principio?

Cual sao as regras da reserva que voce sabe sobre a pesca?
Sobre a manejo florestal?
Voce sabe de outra regras?

Ha algumas regras da reserva que prohibim voce de usar algum recurso natural que voce precisa usar?

Ha alguma regra que prejudica a voce ou as regras ajudam a voce?

Que voce acha de ter uma reserva aqui?

Quem beneficia por que existe uma reserva aqui?

Ha algumas pessoas (ou um grupo) que beneficio mais que outros?

Que beneficio recebe voce por ter uma reserva aqui?

Voce acha que a vida na comunidade e diferente agora que antes houve a Reserva aqui?

Que voce acha era diferente na comunidade antes que existia a Reserva aqui?
Houve algumas mudancas?
Que tinha mudado?

Voce acha que a vida agora e mais facil ou mais dificil agora que existe a reserva aqui?

Que mais tinha mudado desde que voce era crianca?
Quando chego o luz?
Quando comenco chegar as televisoes aqui?

Que mais precisa nessa comunidade?

Que Voce acha de ter tantos pesquisadores aqui?

Informacao pessoal

Nome completo:

Genero:

Data de nascimento:

Lugar de nascimento:

anos moranado nessa comunidade:

Estado civil:

Data de casimento:

de filhos:

nomes deles:

idade do filho maior:

Cuantos pessoas moram na casa agora:

Cuantos anos voce estudou na escola?

Ate que grau?

Sua religiao:

Interview Schedule #2

Work-related Questions:

Are there any differences in working conditions for men and women?

Are men and women paid equally?

Do you know of any incidents where women were treated differently from their male co-workers by program staff? By others?

Are there any requirements regarding clothing on the job? What are they?

Were you trained by a man or a woman? What was this person's attitude about training a woman for this job?

Did you ever hear men talking about having women working along side them in this job? What did they say?

How do the men treat you on the job? Are you treated as an equal? With respect?

How do you feel about being able to do this work? Do you think having this work has changed how you feel about yourself over time?

What are the satisfying things about the work?

What are the hard things?

How has this work changed your life?

Are there any provisions made for child care?

Do you take your children or leave them with someone? (whom)

How does your boss react to absences due to a sick child or relative?

Does your husband/wife also work in the same program?

Is the money you earn yours to do with as you like?

Does the money go to a general family fund? Who decides how to spend this money?

What kinds of things do you buy with your income?

Are they different than the types of things your husband buys with his income?

Coordinadores das Programas

Historico

Nome:

Programa:

Ha quanto tempo voce trabalha no programa? (ou, nesse programa?)

Voce ja trabalhou em algum outro programa do Mamirauá?

Voce pode falar um pouco da historia do programa?

Quando comecou? Qual principal objetivo do programa?

Qual era o impeto por tras do inicio do programa?

Houve problemas ou questoes especificas que necessitavam de atencao?

Os comunitarios pediram o programa ou ele foi iniciado pelo pessoal do Instituto?

Os comunitarios aceitaram o programa do inicio? E agora, como esta?

Quais foram alguns dos maiores resultados?

Houve problemas ao longo do caminho?

Ha documentos que relatam a historia em mais detalhes?

Em qual regioa o programa opera? Tem programas na area subsidiaria?

O seu programa tem muito contato direto ou afeta comunidades locais?

Quais comunidades?

Seu programa opera na Peixe-Boi ou na Nova Vida? (ou ja funcionou em alguma dessas duas alguma vez?)

(Se sim,) Quais diferencas/similaridades a Peixe-Boi tem em comparacao com outras comunidades na Reserva? E a Nova Vida?

Voce tem um mapa (eletronico) onde o programa esta agindo?

Participacao de genero no Programa

Voce acha que seu programa tem mais contato ou efeito em homens ou mulheres?

Eles participam igualmente na tomada de decisoes?

Os homens e as mulheres contribuem com o mesmo tipo de trabalho ou ha uma divisao de trabalhos?

Se ha uma divisao, por que?

Como os homens tratam a mulher quando estao trabalhando juntos?

Houve incidentes onde a mulher foi tratada diferentemente do homem pelo pessoal do programa? E pelos outros?

Quem e o responsavel por treinar as pessoas? (homem ou mulher?)

Quais mudancas voce ve esse programa trazer para seus participantes?

Ha participantes de um certo grupo etario ou a idade varia muito?

Ha mulheres com criancas pequenas que participam nesse programa? Como elas tomam conta dos seus filhos? (elas os deixam ou os levam?)

Trabalhando para o Programa de Fiscalizacão

Voce tem comunitarios empregados no seu programa?

Eles sao homens, mulheres ou ambos?

O que eles fazem? Ha uma divisao do trabalho entre homem e mulher?

Se ha uma divisao, por que ela ocorre?

Ha diferencas nas condicoes de trabalho para homens e mulheres?

Os homens e as mulheres sao pagos igualmente?

Ele recebem beneficios iguais?

Ha mulheres com criancas pequenas que participam nesse programa? Como elas tomam conta dos seus filhos? (elas os deixam ou os levam?)

Ate onde voce sabe, como os maridos e esposas distribuem os ganhos do programa?

Eles juntam os ganhos? Quem decide como o dinheiro vai ser gasto?

Participacao do genero no “Projeto Mamiraua”

Considerando as suas observacoes, um genero tem mais poder que o outro? Em quais aspectos da vida?

Voce acha que tem havido diferencas em como homens e mulheres sao afetados pelo programa? Pelos regulacoes?

Hoje em dia, voce acha que ha diferencas no grau de participacao dos homens e das mulheres na organizacao politica da Reserva? Quem vai mais as reunioes setoriais? E a assembleia geral?

Tem havido mudancas em como homens e mulheres participam na organizacao politica das suas comunidades nos ultimos 15 anos?

E da Reserva?

Voce acha que a participacao nos programas de conservacao, incluindo o ganho de uma renda em alguns casos, tem afetado em como as mulheres se engajam na tomada de decisoes na comunidade e na familia?

Levando em conta sua experiencia nas comunidades, quais diferencas existem hoje em dia no comportamento esperado dos homens e das mulheres?

Dentro a casa

Em publico

Nas festas

Voce acha que tem havido mudancas em como homens e mulheres interagem uns com os outros?

(tanto no nível familiar, ou na esfera pública?)

Por exemplo, como se espera que uma mulher deva se comportar?
Quem fala em público . . .

Você acha que há diferenças em como os homens e as mulheres coletam os recursos naturais? Há recursos que são usados exclusivamente (ou predominantemente) por apenas um gênero?

Tem havido diferenças no uso dos recursos naturais dos homens e das mulheres nos últimos 15 anos?

Você acha que as atividades econômicas alternativas têm tido impacto nas atividades de subsistência tradicionais?

Tem havido mudanças em como os homens e as mulheres trabalham? (a divisão do trabalho dentro da família, ou na comunidade?)

Você acha que há necessidades que são distintas entre os gêneros?

As necessidades das mulheres são atendidas? (e quanto à assistência médica?)

Planejamento quanto ao gênero

Há diferenças significantes entre homens e mulheres que precisam de atenção especial quando se planeja programas de conservação?
(por exemplo, no tipo de trabalho em que cada grupo se engaja, a quantidade de poder que detém)

Tem havido considerações especiais para levar em conta diferenças dos gêneros, diferenciais de poder em alguns dos programas, até onde você saiba?

O seu programa incluiu alguma consideração especial quanto às diferenças dos gêneros e diferenciais de poder que precisavam ser levadas em conta?

Você sabe se algum dos financiadores especificou a inclusão do fator gênero como uma consideração particular no planejamento do programa? (para o seu programa especificamente? Outros?)

O seu programa recebe algum financiamento externo direto? Ou os financiamentos são canalizados através do Instituto?

Quem são os maiores financiadores hoje? Há um documento com essa informação? Contatos?

Observacoes gerais

Na sua opiniao, quais sao os maiores estresses/impactos no ecossistema do Mamiraua? (Produzido internamente ou externamente?)

Na sua opiniao, quais sao os impactos significantes feitos pelos residentes da Reserva?

Voce observou mudancas em como os comunitarios vivem no tempo em que voce tem estado aqui? Ou voce ouviu falar de diferencas que ocorrem desde o comeco da Reserva?

A agricultura de subsistencia e pesca prevalecem hoje como costumavam prevalecer? Isso e bom ou ruim? Por que?

Voce acha que as pessoas tem argumentacao suficiente nas decisoes feitas dentro da Reserva? (especialment em relacao as regras)

Acha que algum grupo tem mais poder que otro? E entre homen e mulher?

O que voce acha que funciona bem com esse sistema de conservacao participativa?

Ha evidencia que voce pode apontar que demonstra sucesso?

Se ha algo que deve ser melhorado, o que deve ser na sua opiniao?

Ate onde voce sabe, o Mamiraua tem sido usado como um modelo para outros parques (mais que Amanã)?

Que tipos de resultado voce tem ouvido falar?
Eles levam em conta as diferencas dos generos?
Contatos?

Questoes finais

Ha mais alguem relacionado ao projeto com quem voce acha que eu deva falar?

Ha algo que voce sente que deve ser investigado em relacao a participacao das pessoas nesse programa?

Ha algum documento disponivel que poderia me ajudar a documentar a participacao das pessoas, tomada de decisao, beneficios recebidos, custos incorridos . . . ?

APPENDIX B:
RESOURCE USE DATA⁴⁵

Natural Resources Collected by Women in Peixe-Boi⁴⁶

Seeds for Artistry	Location of Extraction	Gender that Collects
Chatinha	TF	W
Arapari	R	W
Feijao-urana	BR	W
Tento-vermelho	RA, RB	W
Tento boca-preta	RA, RB	W
Tento penqueno boca-preta	PC	W
Olho de boto	RB	W, M
Vagem de espinho		W
Jauari	RB	W, M
Pupunharana	CH	W, M
Acai	RA	W, M
Santa Luzia	PC	W

⁴⁵ Key to Abbreviations:

The terms are defined in Chapter 2 under *Major Land Formations*.

TF = Terra Firme

TB = Terra Baixo (Low land)

TA = Terra Alta (High land)

R= River

BR= Beira do Rio (River's Edge)

RA= Restinga Alta

RB= Restinga Baixo

CH= Chavascal

TL= Todos Lugares (Everywhere)

L= Lago (Lake)

I= Igapo

RES = Ressaca

PC = Perto da Casa (Near House)

W = Women

M = Men

C = Children

Y = Youth

⁴⁶ This list was compiled during the Resource Use Mapping Activity in Peixe Boi by 9 women. It was then double checked by 3 of those 9 women.

Jatoba	TF	W, M
Conchinha	BR	W
Paricorana	TB	W, M
Muru-muru	TA	W, M
Semente de jaca	TF	W
Semente do purui	TF	W
Semente da goiaba	TB, TA	W
Cumaru	TF	
Seringa	TA, TB	W, M, Y
Roça (Field)	Local de extracao	Genero que coleta
Mandioca	TA	W, M, C
Macaxeira	TA	W, M, C
Mamao	TA	W, M, C
Jerimum	TA, TB	W, M, C
Melancia	TA, TB	W, M, C
Milho	TA, TB	W, M, C
Batata	TA, TB	W, C
Pimentoes	TA, TB	W, C
Vines		
Hibé	TA, TB	W, M, Y
Fallow	Local de extracao	Genero que coleta
Banana	TA	W
Cacau	TA	W, M, C
Acai	TA	M, Y
Fruta pao	TA	W, M
Medicinal Plants		
Cipo pina	TA, TB	W, M

Casca de caju	TA	W, M
Apui Sto. Antonio	TA, TB	W, M
Cipo de arco-iris	TA, TB	W, M
Tachi-branco	TA, TB	W, M
Bacurauzinho	TA, TB	W, M
Pirarucuá	TB	W
Caridiru	TB	W
Hortelaozinho	TB, TA	W
Hortelaozao	TB, TA	W
Acaizinho	TA, TB	W, M
Alho-planta	TA, TB	W
Paracanauba	TA, TB	W, M
Padurana	TA, TB	W, M
Camu-camu	TA, TB	W, M
Magarataia	TA, TB	W
Magartaia-amarela	TA, TB	W
Leite de jerimum	TA, TB	W
Peao-roxo	TA, TB	W
Algodao-branco	TA, TB	W
Algodao-roxo	TA, TB	W
Cidreira	TA, TB	W
Trevo-roxo	TA, TB	W
Erva de passarinho	TA, TB	W
Casca	TL	W, M
Amuxida		W, M
Caroco do abacate	TL	W, M
Afavaca	TA, TB	W
Capim-santo	TA, TB	W
Folha de maracuja	TL	W, M
Flor do maracuja	TL	W, M
Barro de louca	TA	W, M

Macucu	TA, TB	W, M
Casca de seringa barriguda	TA, TB	W, M
Casca de assacu	TA, TB	W, M
Olho da goiaba	TA, TB	W, M
Folha de abacate	TL	W, M
Paracuuba	TA, TB	W, M
Mastruz	TA, TB	W
Mutuquinha	TA, TB	W
Agua da bananeira	TA, TB	W, M
Fish	Local de extracao	Genero que coleta
Pirapitinga	L, I	W, M, Y, C
Tambaqui	L, I	W, M, Y
Pirarucu	L, I	M, Y
Surubim	L	M, Y
Tucunare	L, I	W, M, Y, C
Pacu	L, I	W, M, Y
Aracu	L, I	W, M, Y
Carauacu	L, I	W, M, Y
Traira	L	M, Y
Jacunda	L	M, Y
Curimatan	L, I	M, Y
Jaraqui	L, I	W, M, Y
Bodo	L, RES	W, M, Y
Chorona	L, R	M, Y
Cascudinha	L, R	W, M, Y
Pescada	L, R	M, Y
Filhote	R	M, Y
Pirarara	R	M, Y
Pacamum	R	M, Y
Bagre	R	M, Y

Dourado	R	M, Y
Caparari	R	M, Y
Pirabuta	R	M, Y
Barba-chata	R	W, M, Y
Pirapitinga		
Jandia	L, R	W, M, Y
Piranha-caju	L	W, M, Y
Piranha-preta	L	W, M, Y
Piranha-branco	R	W, M, Y
Trees for Commercialization	Local de extracao	Genero que coleta
		M, Y
Assacu	TA, TB	M, Y
Louro-namui	TA, TB	M, Y
Macaca	TA, TB	M, Y
Mungubarana	TA, TB	M, Y
Abiorana	TA, TB	M, Y
Jito	TA, TB	M, Y
Abacatirana	TA, TB	M, Y
Piranheira	TA, TB	M, Y
		M, Y
Trees for Floating Houses	Local de extracao	Genero que coleta
Assacu	TA, TB	M, Y
Piranheira	TA, TB	M, Y
Louro-namui	TA, TB	M, Y
Trees for Domestic Use and Fishing	Local de extracao	Genero que coleta
Assacu	TA, TB	M, Y
Paracanauba	TA, TB	M, Y

Louro-namui	TA, TB	M, Y
Paracuba	TA, TB	M, Y
Fruits	Local de extracao	Genero que coleta
Bacuri	TB	W, M, Y, C
Jenipapo	TA, TB	W, M, Y, C
Camo-camo	TA, TB	W, M, Y, C
Araçar	TB	W, M, Y, C
Ingá	TA, TB	W, M, Y, C
Fruits for Fish Bait		
Jauari	TA, TB	W, M, Y
Hamui Louro	TA, TB	M, Y
Abiorcuna	TA, TB	M, Y
Sardinheira	TA, TB	W, M, Y
Pirarheira	TA, TB	M, Y
Mungubarana	TA, TB	M, Y
Garden Plants	Local de extracao	Genero que coleta
Cebola	PC	W, C
Pimentao	PC	W, C
Chicoria	PC	W, C
Cheiro verde	PC	W, C
Couve	PC	W, C
Jambo	PC	W, C
Carirú	PC	W, C

Natural Resources Collected by Men in Peixe-Boi⁴⁷

Fish Bait (seeds, nuts, fruits)	Location of Extraction	Gender that Collects Species
Semente do Namui	RA, RB	W, M (MORE MEN)
Pupunharana	RB	W, M (MORE MEN)
Jauari	RB	W, M (MORE MEN)
Seringa	RB	W, M (MORE MEN)
Mata-fome	RB	W, M (MORE MEN)
Violeta	RA	W, M (MORE MEN)
Seringai	RA, RB	W, M (MORE MEN)
Jamarurana	RB	W, M (MORE MEN)
Limorana	RA	W, M (MORE MEN)
Socoro	RB	W, M (MORE MEN)
Arati	RA	W, M (MORE MEN)
Camu-camu	RA	W, M (MORE MEN)
Catore	RA, RB	W, M (MORE MEN)
Parmeira		
Sardinheira		
Lourinho		
Araca		
Castanha da Sapucaia		
Imbauba		
Eggs		
Ovo de cigana		
Ovo de anun		
Ovo de jacare	RB, Aningal	W, M
Ovo de tartaruga	Beach	

⁴⁷ This list was compiled during the Men's Resource Use Mapping Activity in Peixe-Boi by 9 men and 6 boys.

Ovos de outros bichos de casco	Beach	
Medicines		
Carapanauba	RA	W
Copaiba	RA	W
Mulateiro	RA	W W
Catore	RB	W
Padurana	RA, RB	W
Juruparipina		W
Ambe		W
Caxinguba		W
Casca de Tapereba		W
Casca de seringa barriguda		W
Casca de Assacu		W
Atuma		W
Casca de cajurana		
Mel	RA	M
Vines		
Cipo imbe	RA	W
Cipo titica	RA	W
Cipo escada-de-jabuti	RA	M
Cipo de fogo	RB	M
Cipo unha-de-gato (juruparipina)	RA	W
Cipo irarabucha		
Cipo cururu		
Cipo itua		

Fish	Local de extracao	Genero que coleta
Pirarucu		
Tambaqui		
Piranha-mucura		
Piranha-caju (vermelha)		
Piranha-preta		
Piranha-branca		
Piranha-pacu		
Carauacu		
Tucunare		
Arauana		
Aracu		
Bodo		
Pirapitinga		
Jiju		
Cara-duro		
Pongo (traira)		
Cara-roxo		
Surubim		
Puraque		
Curimata		
Caparari		
Pacu		
Pirarara		
Arraia		
Jandia		
Cuiu-cuiu		
Candiru		
Piracatinga		
Pirauaca		
Pirabutao		

Filhote		
Pescada		
Dourado		
Saco-de-padre		
Bacu		
Jacare tinga		
Jacare acu		
Sardinha		
Jaraqui		
Matrinchao		
Jatuarana		
Charuto		
Arari		
Matupiri		
Cascudinha		
Chorona		
Bodo-sem-costela		
Bodo-cascudo		
Xurui		
Mandiim		
Peixe-cachorro		
Sardinhao		
Jacunda		
Bucudo		
Buqui-buqui		
Peixe-agulha		
Peixe-boi (mamifero)		
Peixe-cubiu		
Tracaja (tracaja femea)		
Ze prego (tracaja macho)		
Mata-mata		

Cabecudo		
Aiaca		
Tartaruga da Amazonia		
Braco-de-moca		
Bico-de-pato		
Mandube		
Arari		
Cara-cascudo		
Cara-bauari		
Trees for Commercialization	Local de extracao	Genero que coleta
Louro-namui	RA	W, M (MORE MEN)
Louro-preto	RA	W, M (MORE MEN)
Jito	RA	W, M (MORE MEN)
Abiorana	RA	W, M (MORE MEN)
Castanha-de-macaco	RA	W, M (MORE MEN)
Macacaricuia	RA	W, M (MORE MEN)
Paricarana	RA	W, M (MORE MEN)
Miratinga	RA	W, M (MORE MEN)
Tacaca	RA	W, M (MORE MEN)
Louro-amarelo	RA	W, M (MORE MEN)
Louro-jacare	RA	W, M (MORE MEN)
Piranheira	RA, RB	W, M (MORE MEN)
Abiorana	RA	W, M (MORE MEN)
Ucuuba	RB	W, M (MORE MEN)
Jacareuba (em extincao)	RA	W, M (MORE MEN)
Envira-vassourinha (em exticao)	RB	W, M (MORE MEN)
Samauma (em extincao)	RA	W, M (MORE MEN)
Virola (em extincao)	RA, RB	W, M (MORE MEN)

Arapari	RB	W, M (MORE MEN)
Araparirana (Cedrinho)	RB	W, M (MORE MEN)
Cedro (em extincao)	RA	W, M (MORE MEN)
Saboarana	RA	W, M (MORE MEN)
Maparajuba	RA	W, M (MORE MEN)
Mututim	RB	W, M (MORE MEN)
Mungubarana	RA, RB	W, M (MORE MEN)
Trees for Houses	Local de extracao	Genero que coleta
Assacu	RA, RB	
Socoro	RB	
Mata-mata	RA, RB	
Castanheira	RA	
Piranheira	RA, RB	
Trees for Domestic Utensiles	Local de extracao	Genero que coleta
Paracuba	RA	
Paracanauba	RA	
Trees for Canoes	Local de extracao	Genero que coleta
Bacatirana	RA	
Jito	RA	
Louro-namui	RA	
Jacareuba	RA	
Faveira	RA	
Assacu	RA, RB	
Socoro	RB	
Mata-mata	RA, RB	
Castanheira	RA	
Piranheira	RA, RB	

Cedro		
Trees for Canoe Paddles	Local de extracao	Genero que coleta
Paracanauba	RA	
Mututim	RA	
Louro-namui	RA	
Jacareuba	RA	
Mulateiro	RA	
Cedro	RA	
Louro-preto	RA, RB	
Louro-amarelo	RA	
Louro-jacare	RA, RB	
Araparirana	RB	
Jito	RA	
Bacatirana	RA	
Itauba	RA	
Fruits	Local de extracao	Genero que coleta
Acai	RA	M
Cacau	RA	W, M
Purui	RA	W, M
Tapereba	RA	W, M
Cuibiu	RA	W, M
Jerimum	RA	W, M
Camu-camu	RB	W, M
Arati	RB	W, M
Jenipapo	RB	W, M
Socoro	RB	W, M
Mari-mari	RB	W, M
Maparajuba	RB	W, M
Mama de peixe-boi	RB	W, M

Marirana	RA	W, M
Mamao-urana	RA, RB	W, M
Mamao	RA	W, M
Banana	RA	W, M
Maracuja	RB	W, M
Seeds for Artistry	Local de extracao	Genero que coleta
Jauari	RA	W
Tento	RB	W
Facapau	RB	W
Araparirana-de-papagaio	RA	W
Uacaa		
Pau-de-arraia		
Unha-de-gato		
Seringa		

**Summary of Natural Resource Categories and Species Named by
Men and Women in Peixe-Boi**

Men's Categories (12)	Sp #	Women's Categories (10)	Sp #
Frutas	18	Frutas	5
Sementes para artesanato	8	Sementes para artesanato	22
Remedios	14	Remedios	41
Peixes	70	Peixes	35
Arvores para manejo	25	Arvores para manejo	8
Arvores para casas e flutuantes	5	Arvores para casas e flutuantes	3
Arvores para fazer utensilios domesticos	2	Arvores para utensilios domesticos e pesca	4
Arvores para fazer canoa	11	-----	
Arvores para fazer remo	13	-----	
Ovos	5	-----	
Isca para pescar	19	-----	
Cipos	8	-----	
-----		Roca	8
-----		Capoeira	4
-----		Horta	7

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